

Online Appendix for

**The Early Impact of the Affordable Care Act State-By-State**

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This Online Appendix contains supplementary material to my paper *The Early Impact of the Affordable Care Act State-By-State* for the Fall 2014 issue of the *Brookings Papers on Economic Activity*. It is organized as follows:

- I. Graphical Comparison of Raw vs. Imputed Data
- II. Robustness to Imputation
- III. Robustness to Focusing Exclusively on 2014Q1 or 2014Q2
- IV. Robustness to Premiums and Average Costs
- V. Enrollment at the End of 2014Q2

## **I. Graphical Comparison of Raw vs. Imputed Data**

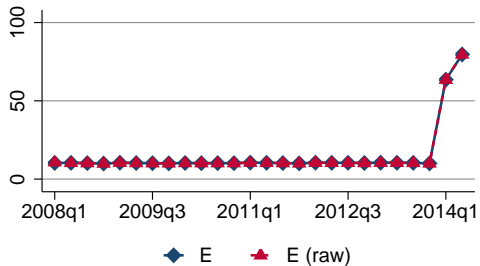
The graphs in this section show the time trend in enrollment, member months, average costs, and average premiums for each of the 50 states and the District of Columbia for the period 2008Q1 through 2014Q2. Each graph plots the time series for both the raw data series and the imputed data series. The imputation procedure is described in the appendix to the paper.

Units for each state-quarter observations are:

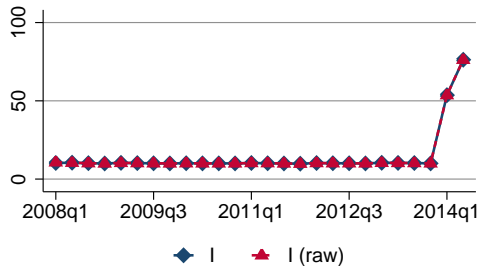
- Enrollment (Thousands of Persons)
- Coverage (Monthly Average, Thousands of Persons)
- Premium (Monthly Average, \$)
- Average Cost (Monthly Average, \$)

It should be noted that enrollment numbers are different than the coverage numbers in the following way: enrollment is defined as a count of individuals enrolled, whereas coverage is computed as the average number of individuals enrolled throughout the three-month period (quarter).

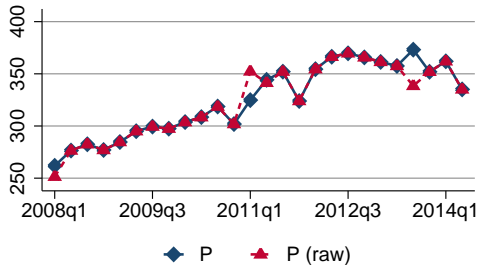
Enrollment  
AK



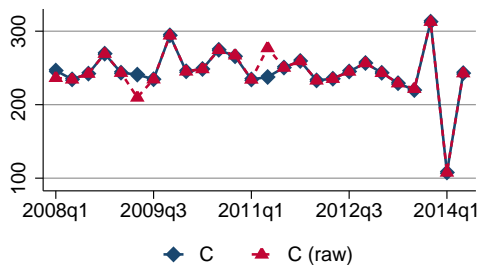
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AK



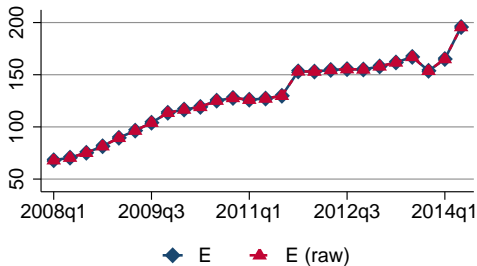
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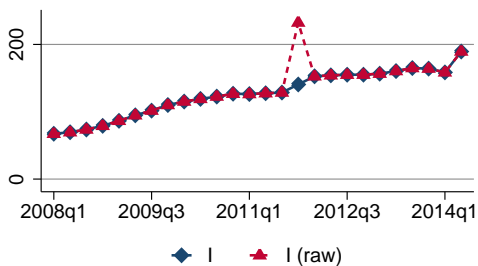
Average Cost  
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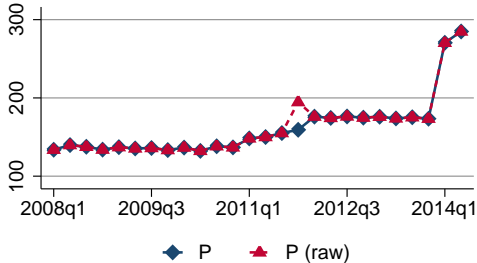
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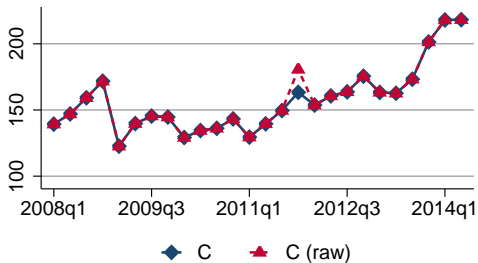
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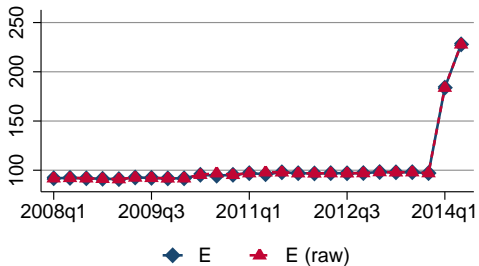
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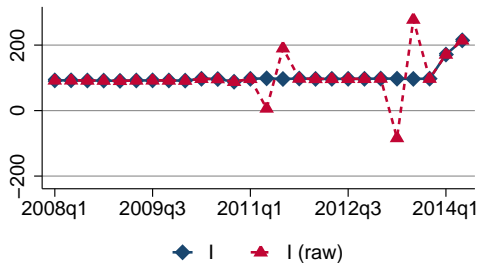
Average Cost  
AL



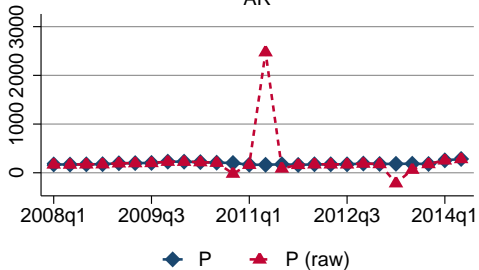
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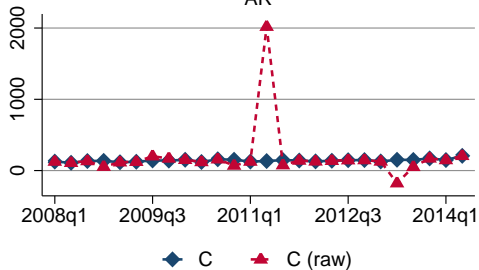
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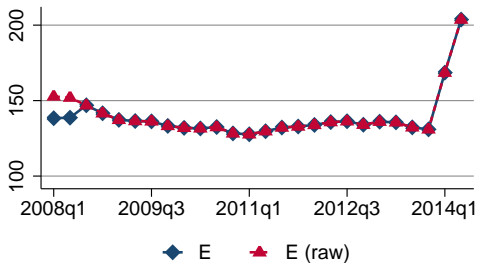
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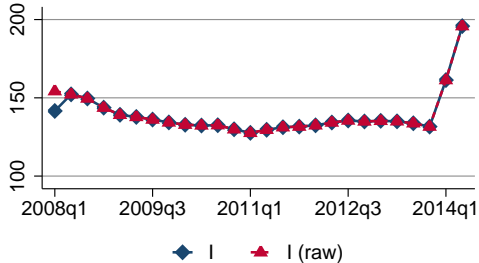
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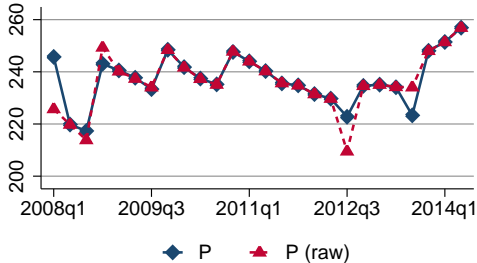
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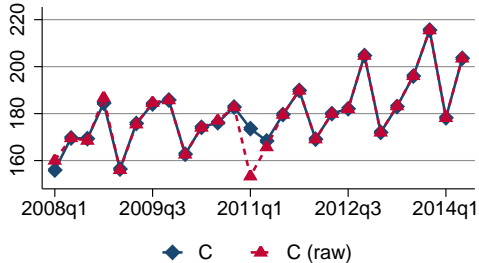
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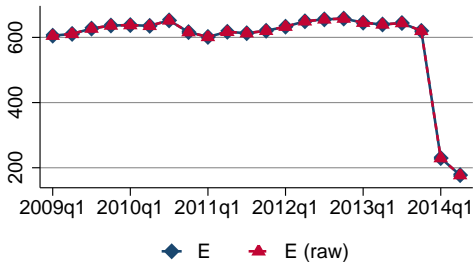
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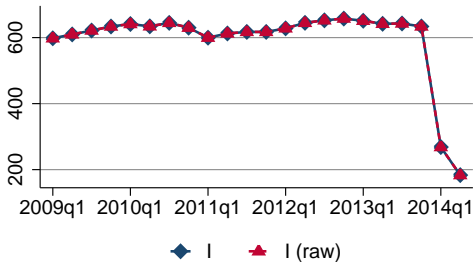
Average Cost  
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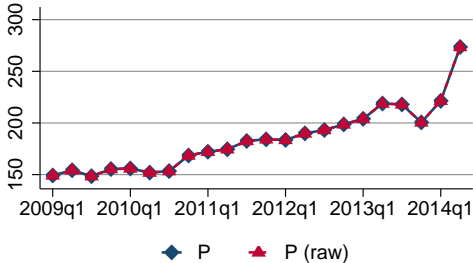
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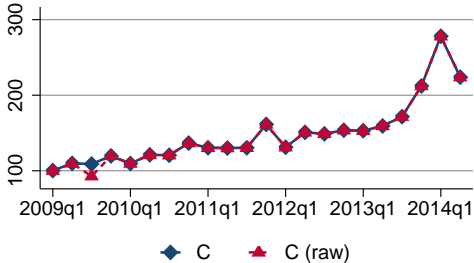
Coverage  
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Premium  
CA

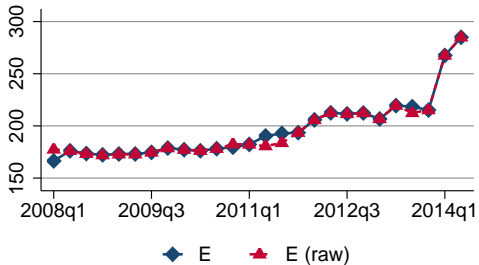


Average Cost  
CA

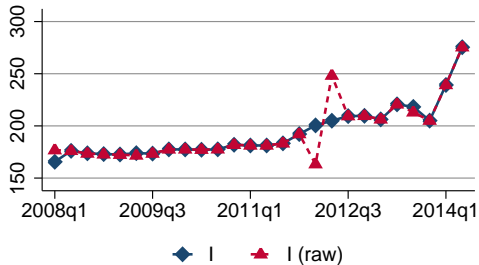




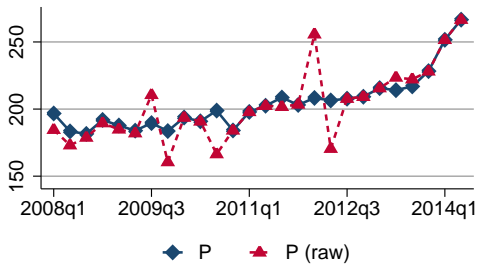
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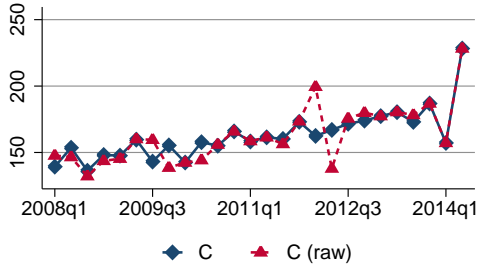
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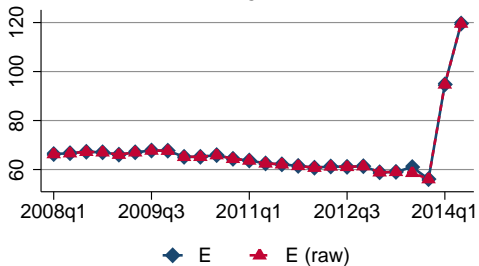
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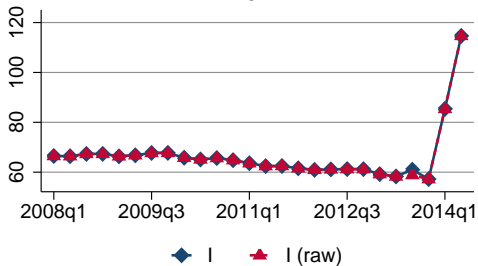
Average Cost  
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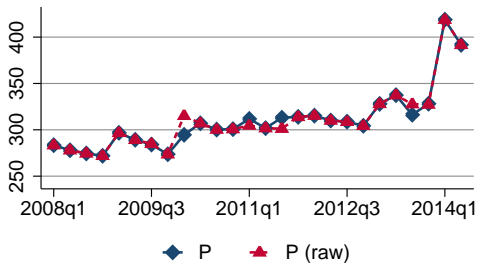
Enrollment  
CT



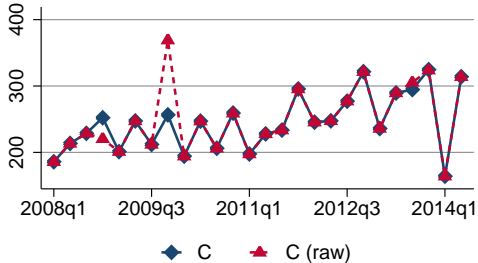
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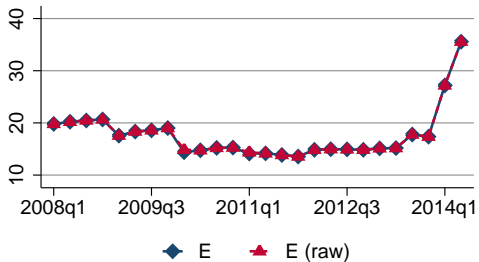
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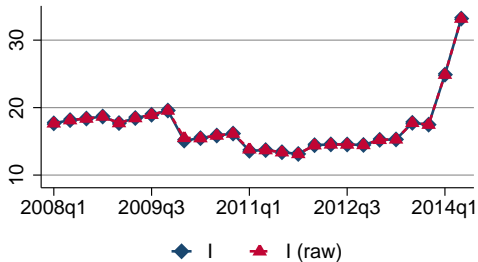
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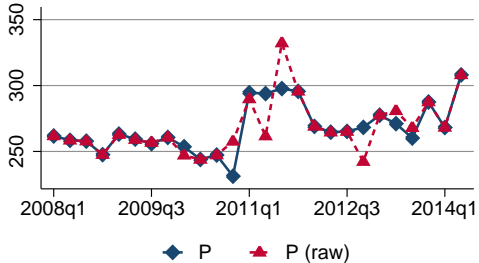
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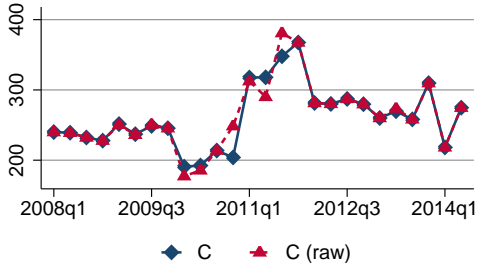
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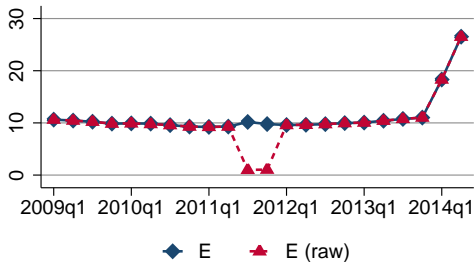
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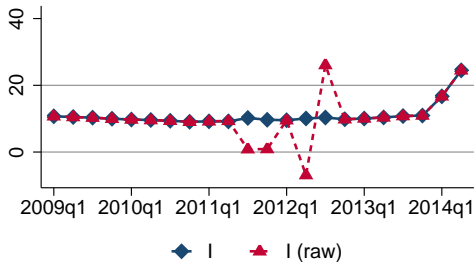
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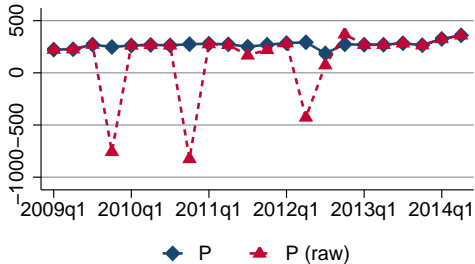
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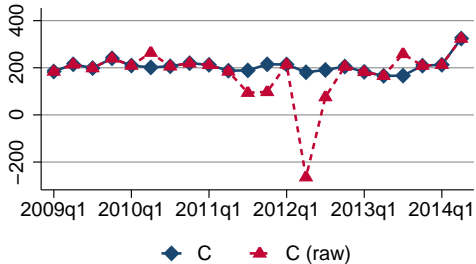
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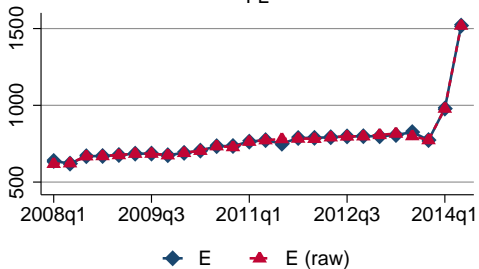
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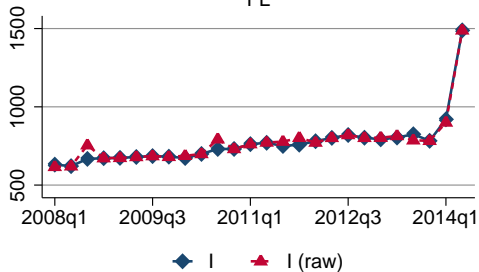
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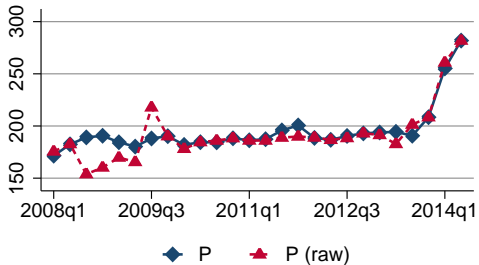
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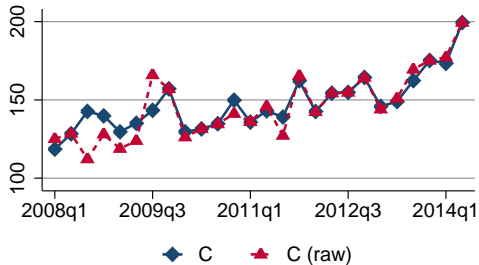
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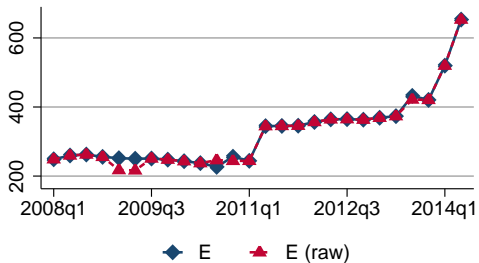
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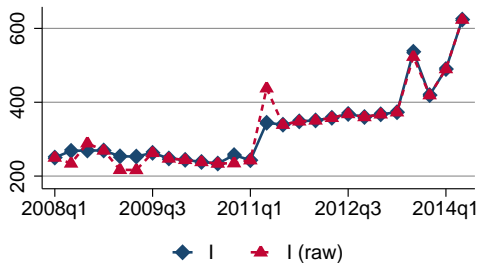
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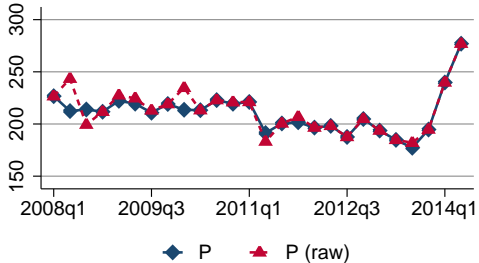
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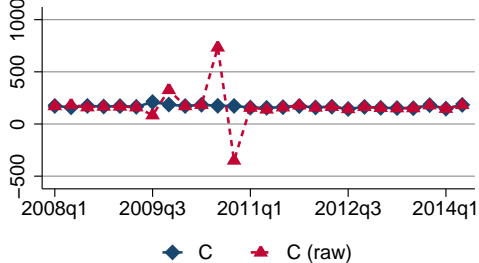
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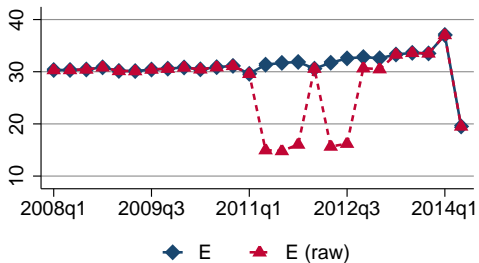
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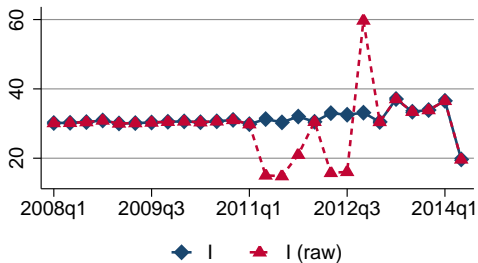
Average Cost  
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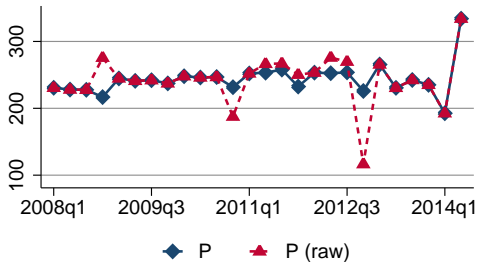
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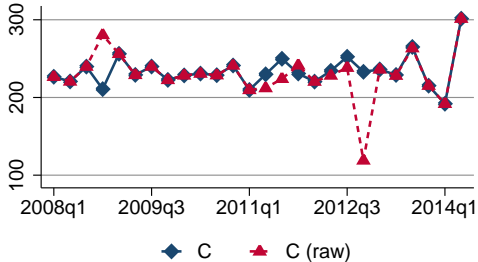
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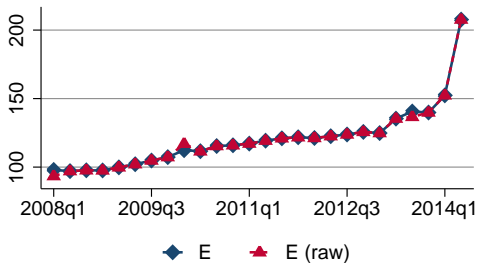
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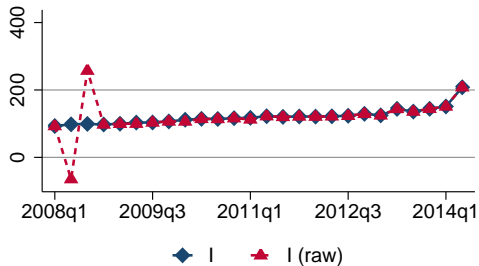
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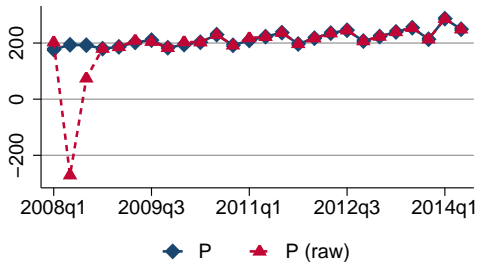
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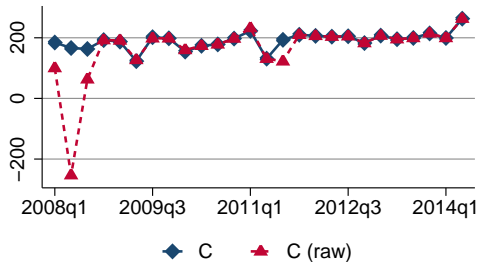
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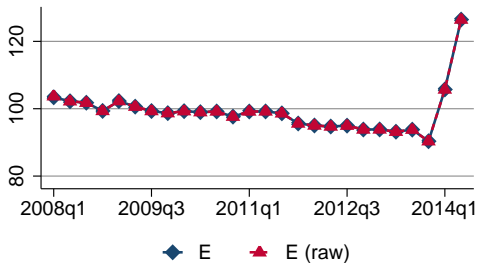


Average Cost  
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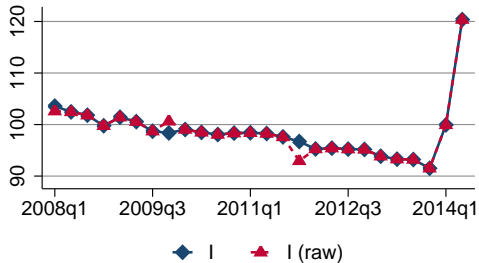




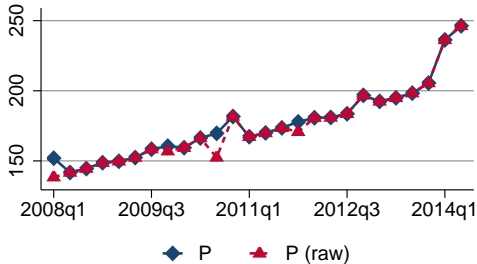
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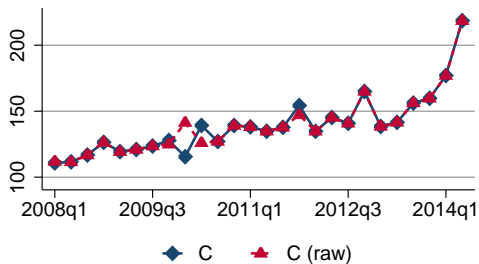
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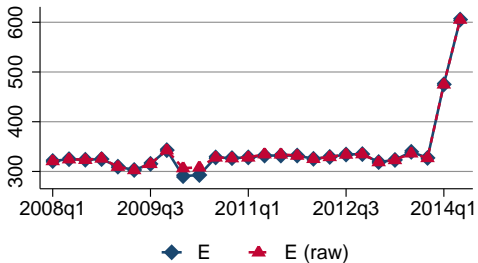
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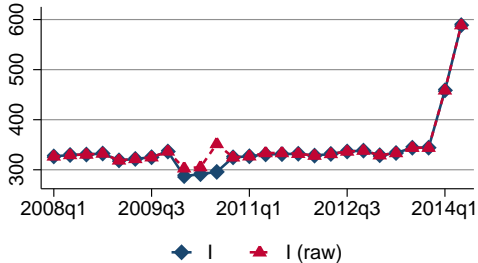
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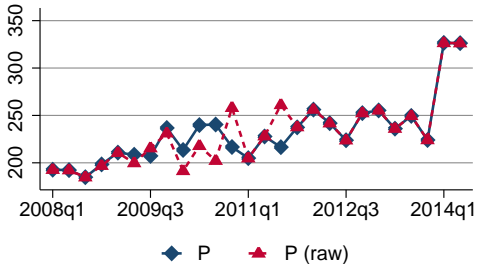
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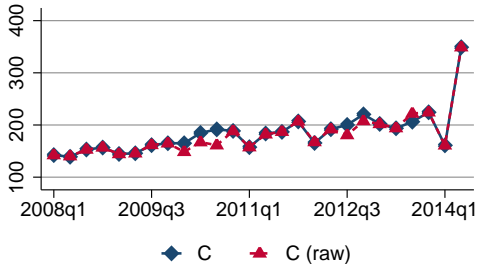
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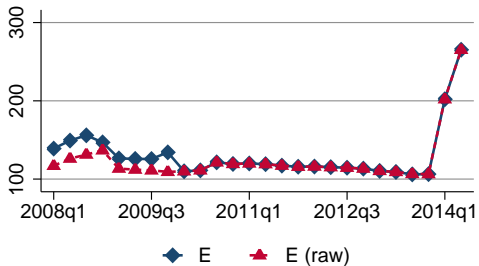
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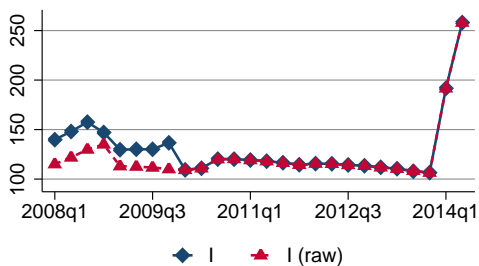
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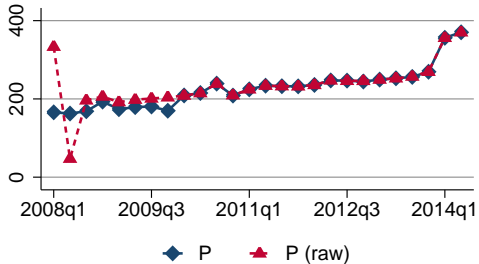
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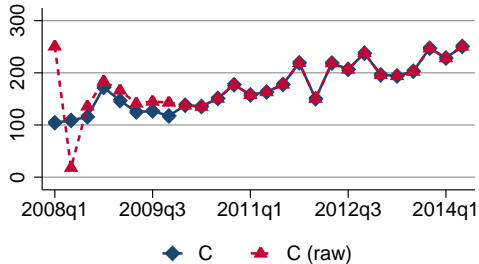
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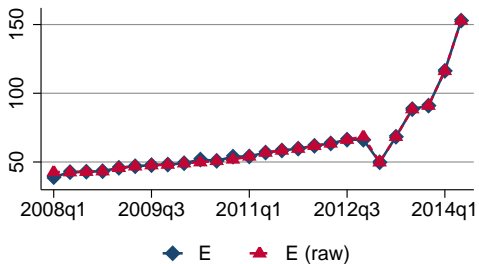
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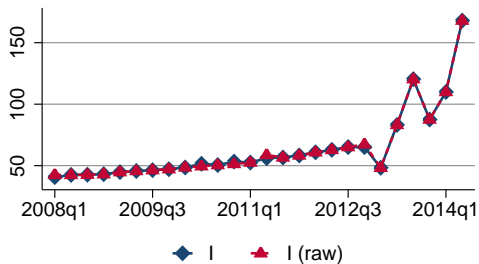
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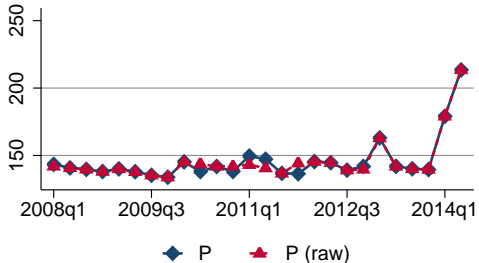
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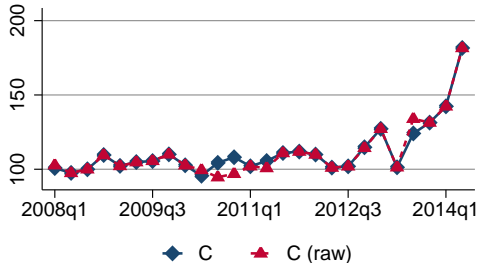
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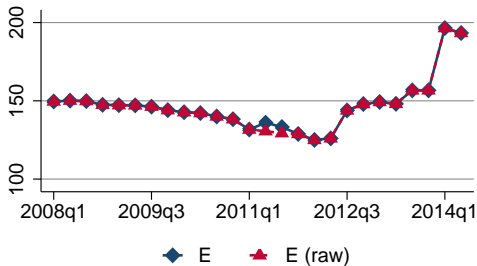
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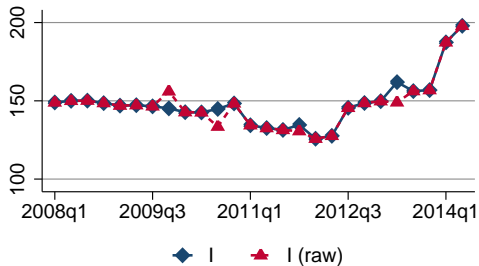
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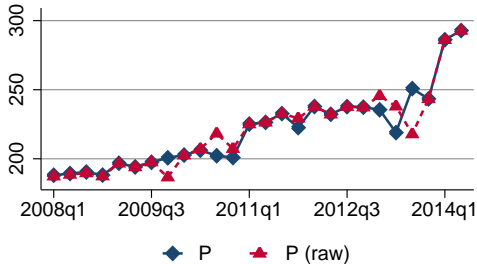
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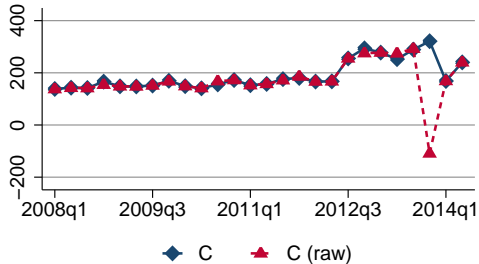
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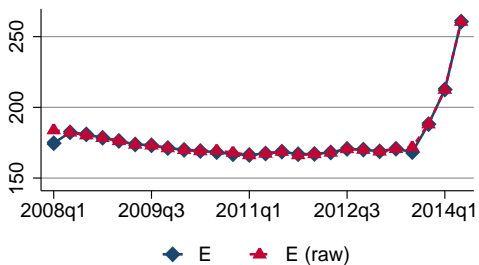
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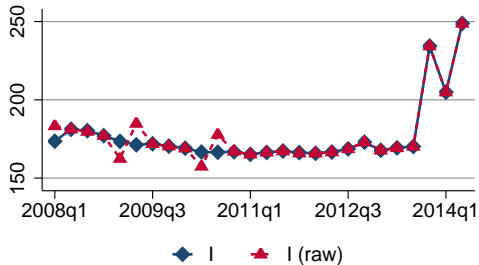
Average Cost  
KY



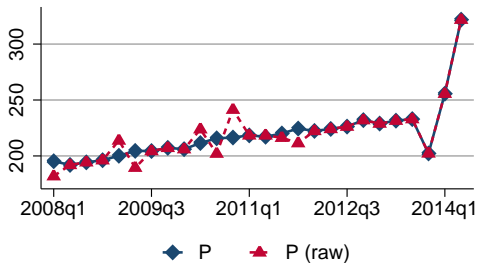
Enrollment  
LA



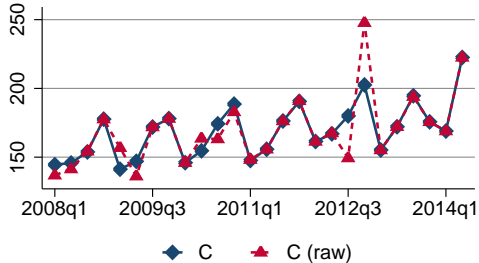
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LA



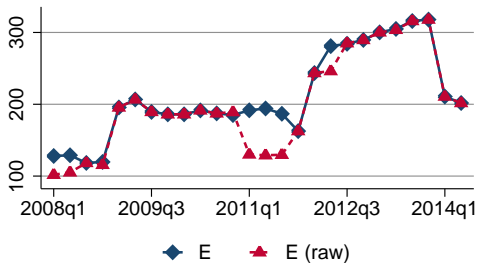
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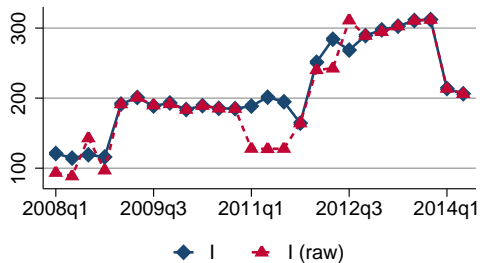
Average Cost  
LA



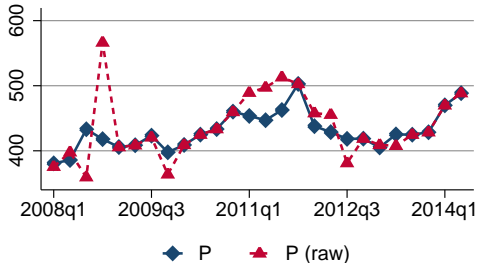
Enrollment  
MA



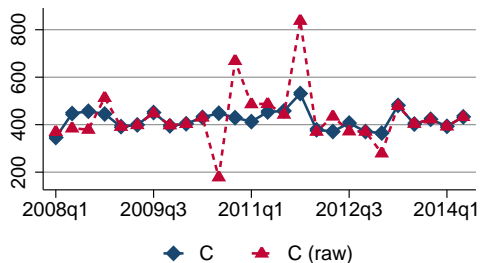
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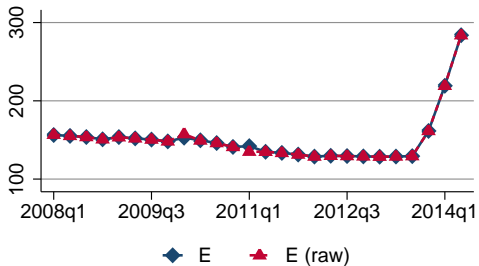
Premium  
MA



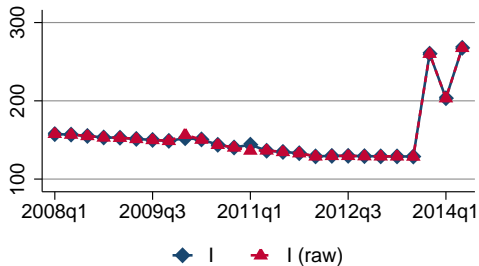
Average Cost  
MA



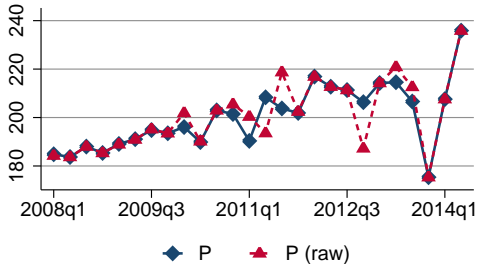
Enrollment  
MD



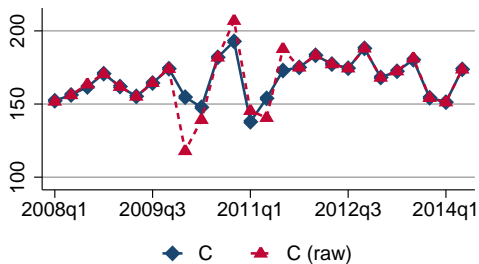
Coverage  
MD



Premium  
MD

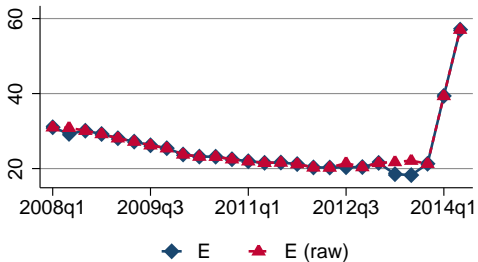


Average Cost  
MD

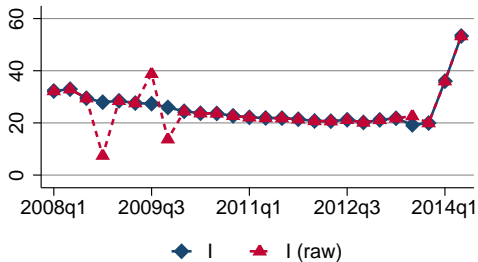




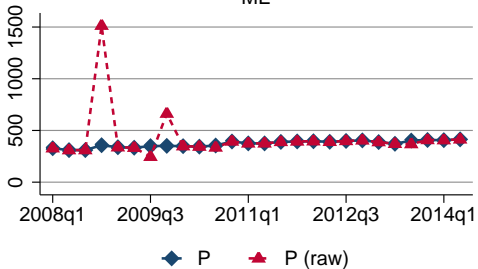
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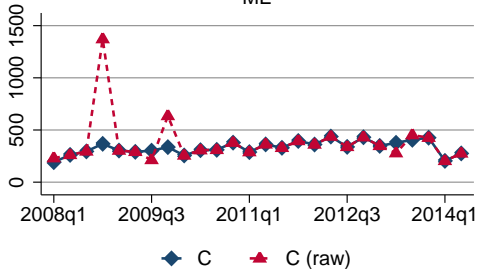
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ME



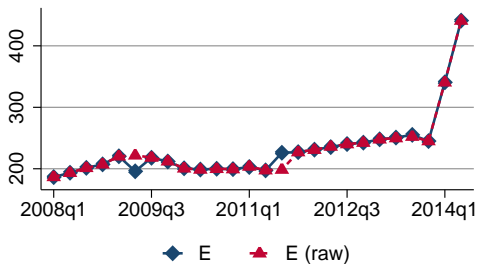
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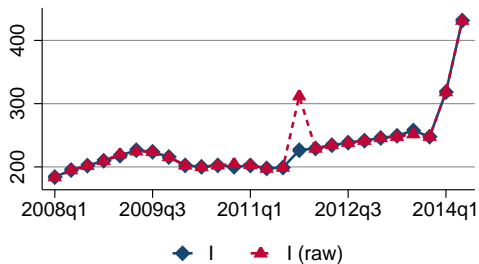
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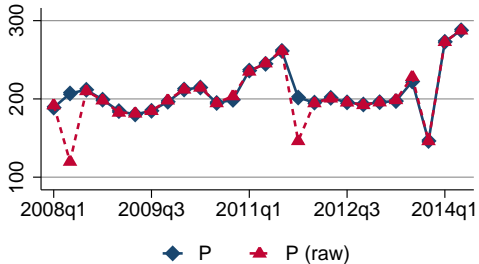
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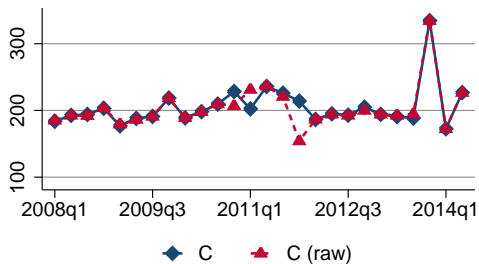
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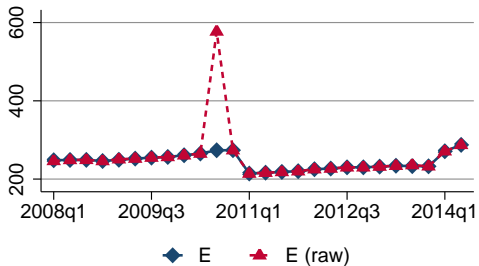
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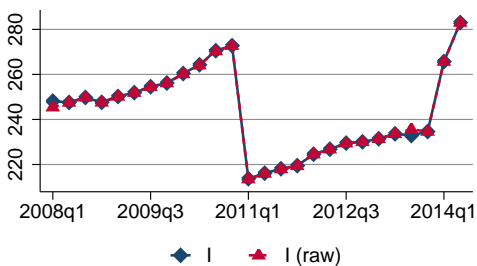
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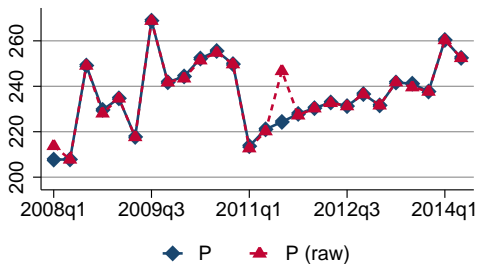
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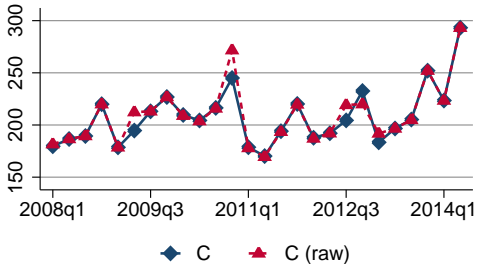
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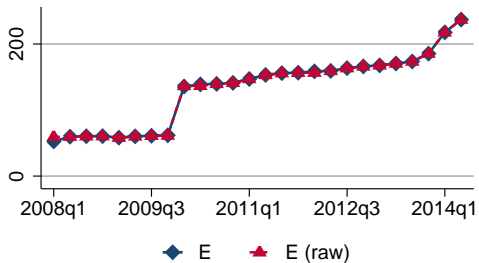
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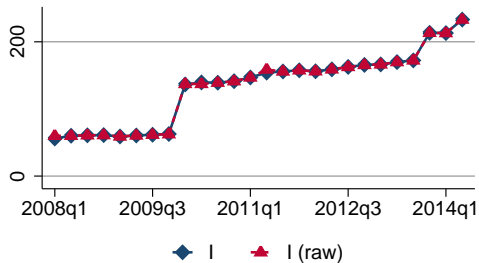
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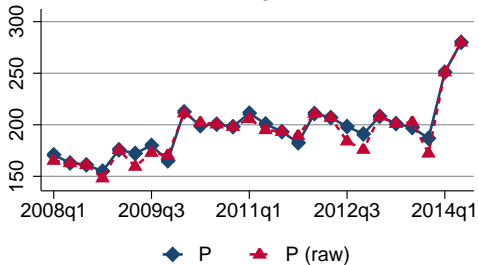
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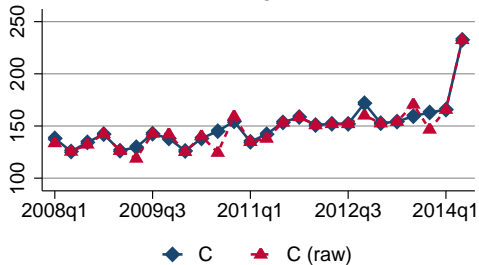
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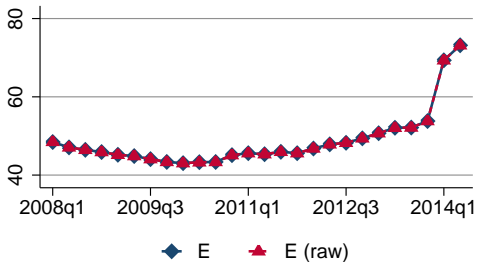
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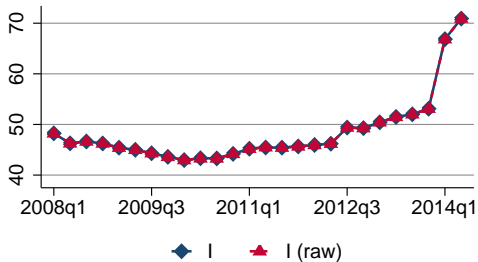
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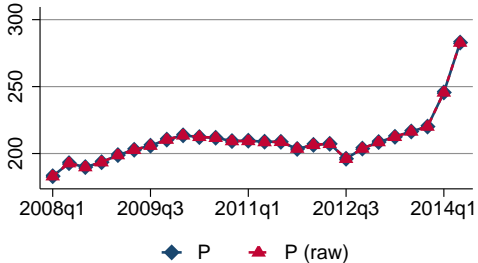
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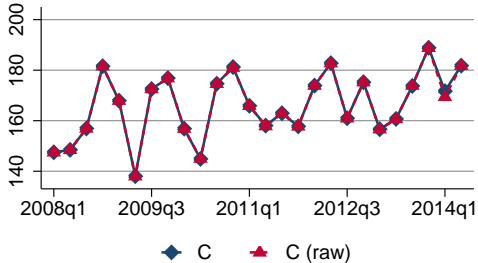
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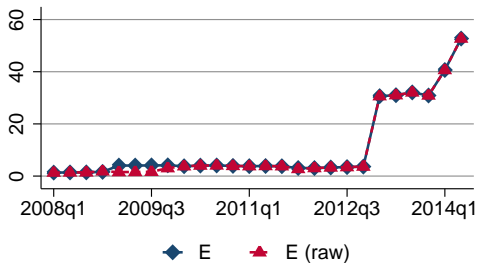
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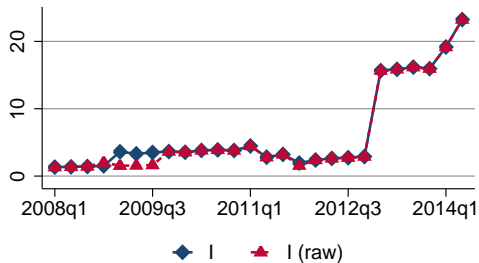
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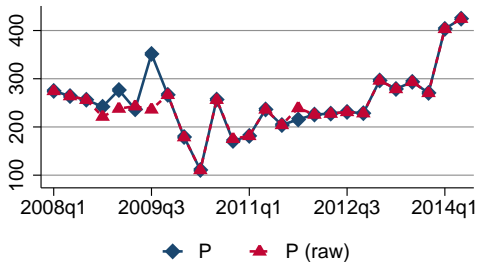
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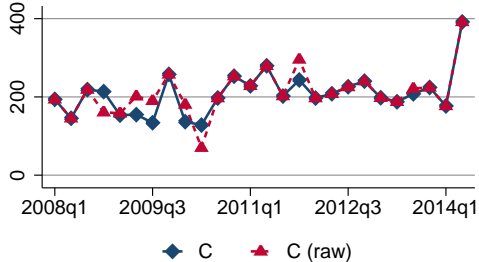
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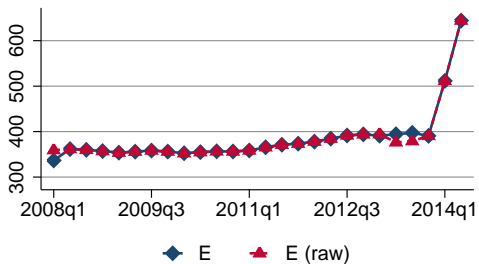
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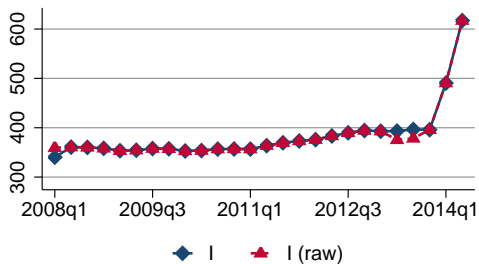
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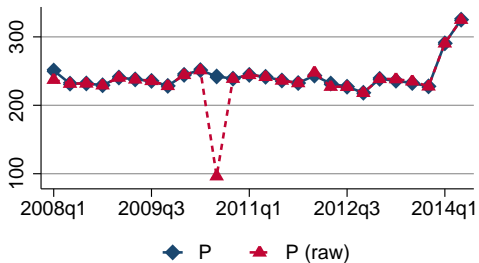
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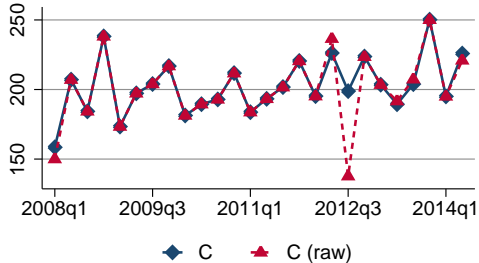
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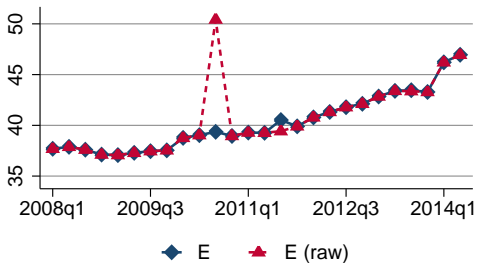
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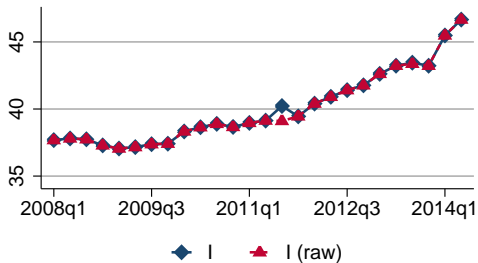
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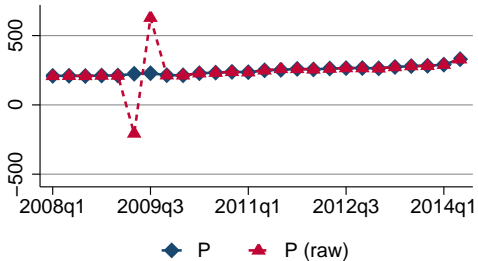
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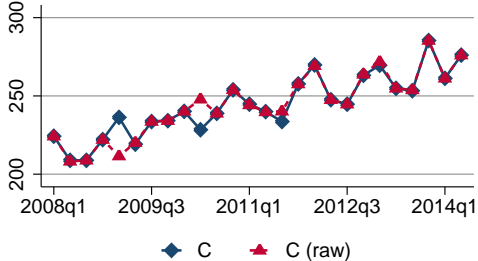
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Premium  
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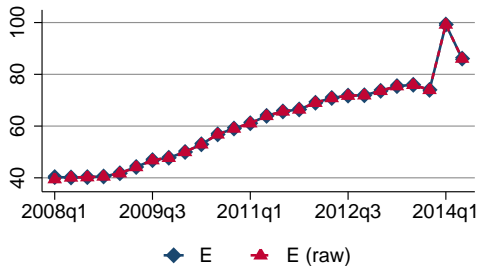


Average Cost  
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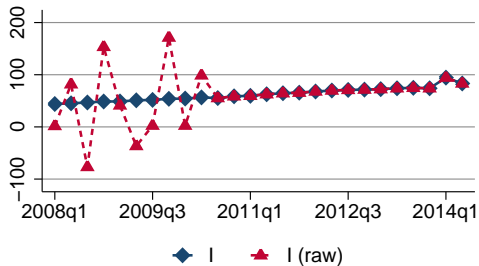




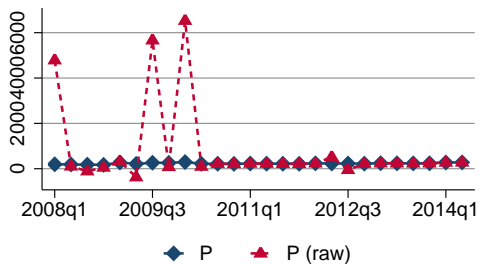
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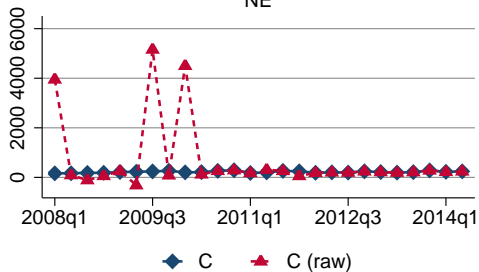
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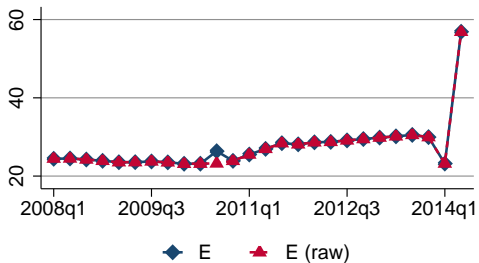
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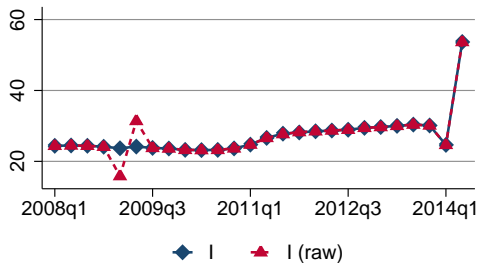
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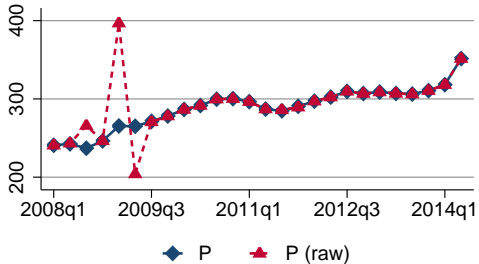
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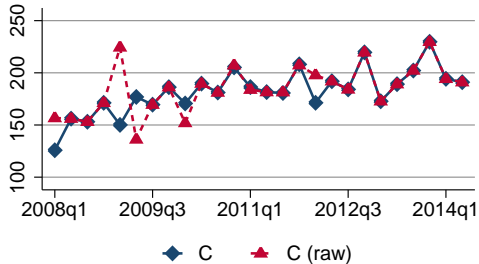
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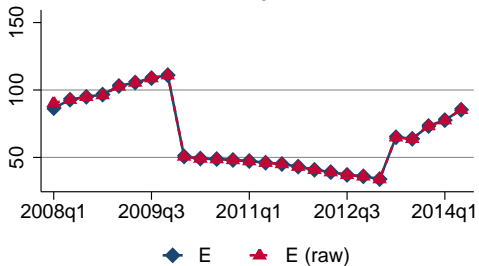
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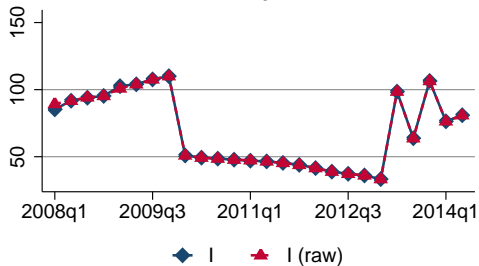
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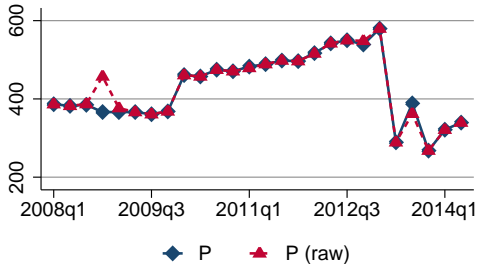
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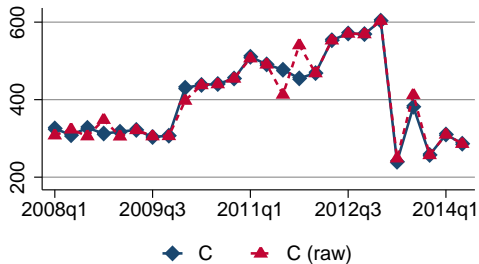
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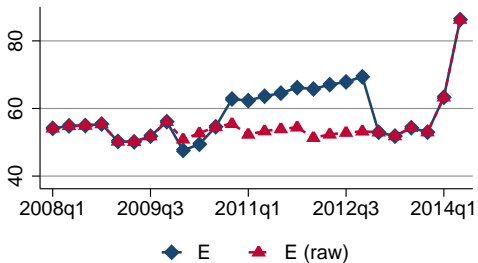
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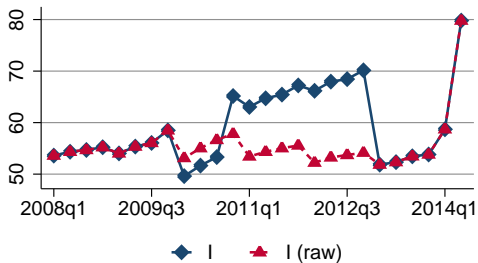
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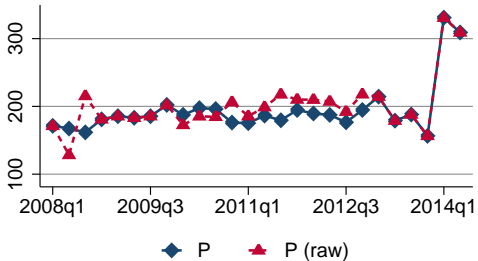
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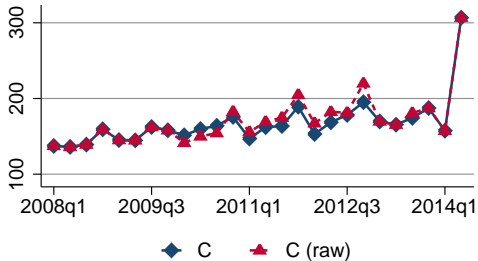
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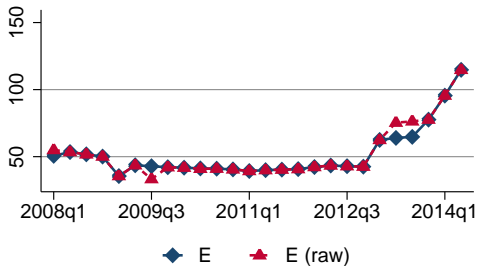
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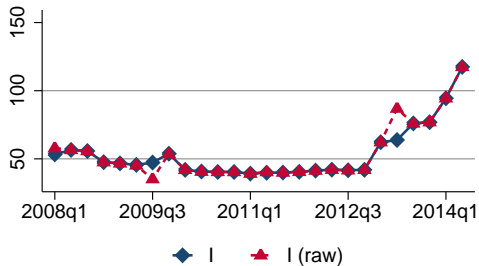
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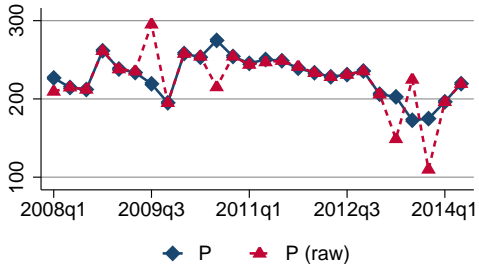
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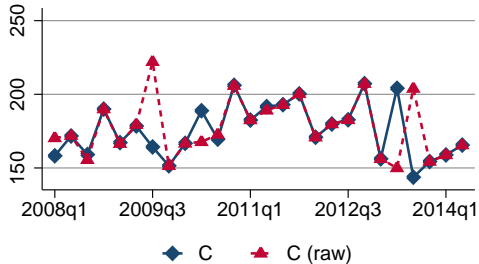
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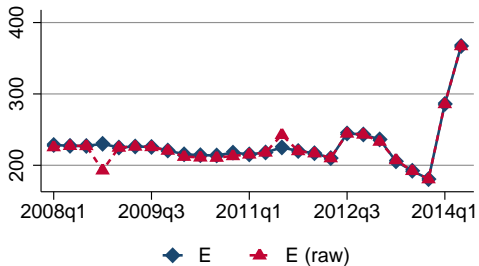
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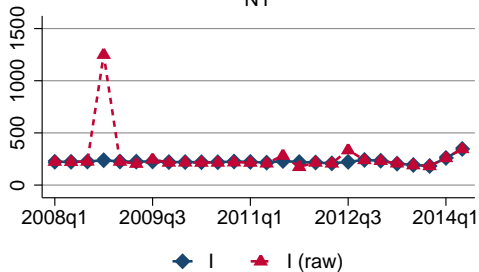
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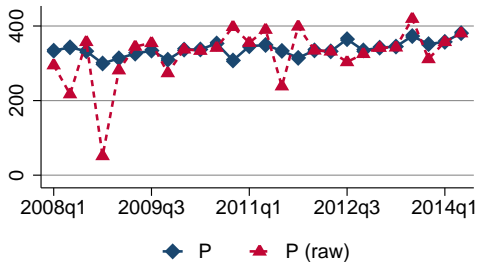
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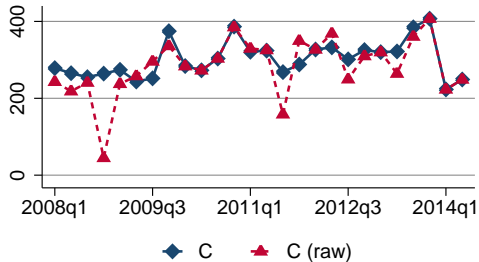
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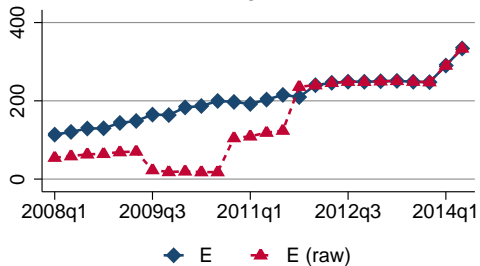
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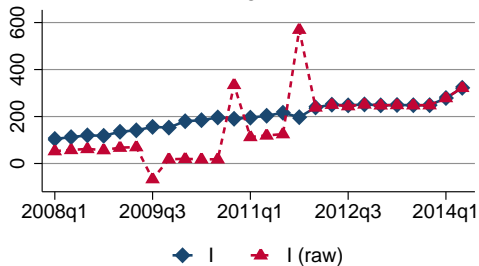
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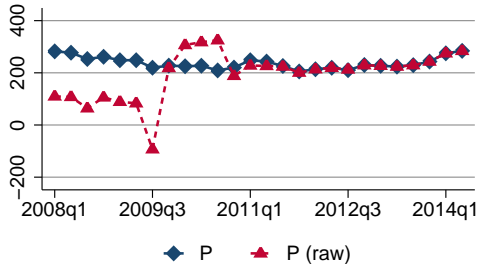
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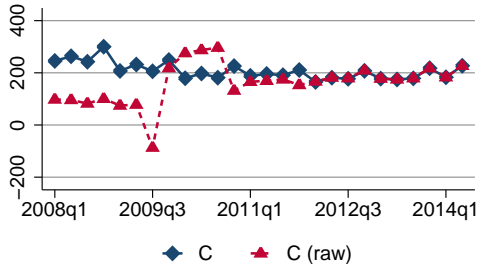
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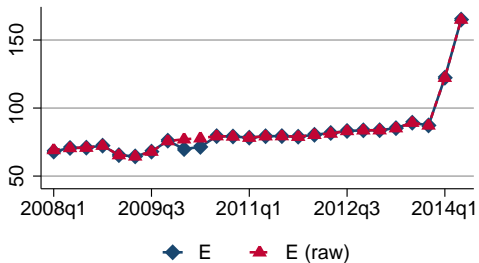
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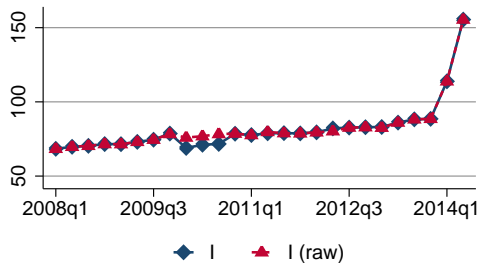
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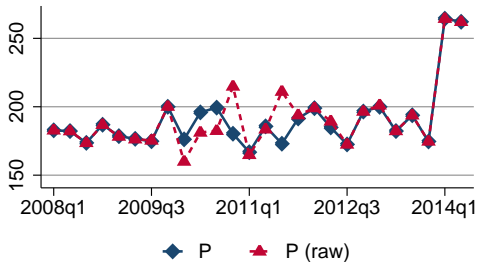
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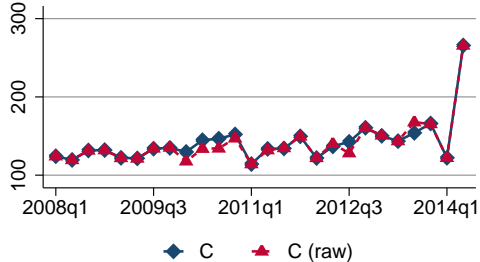
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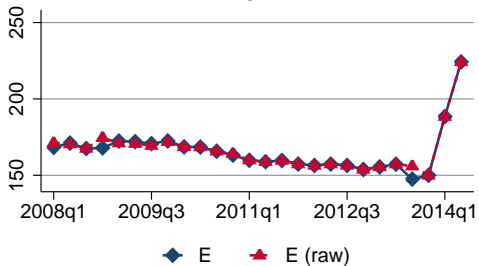


Average Cost  
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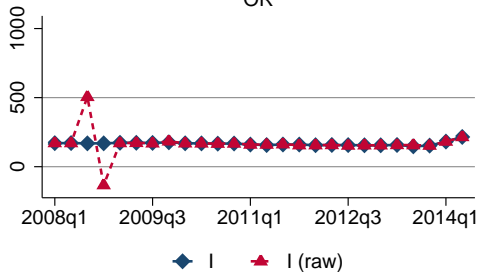




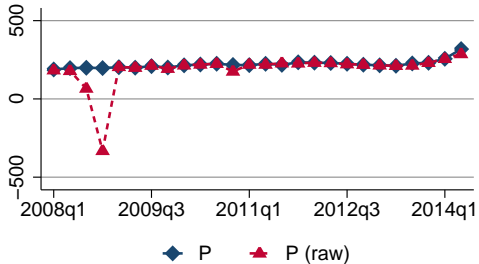
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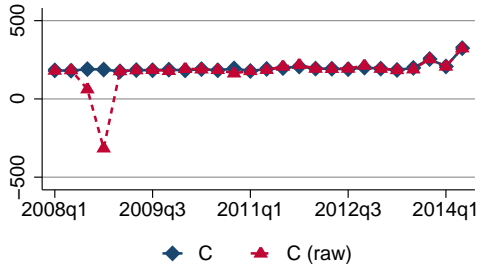
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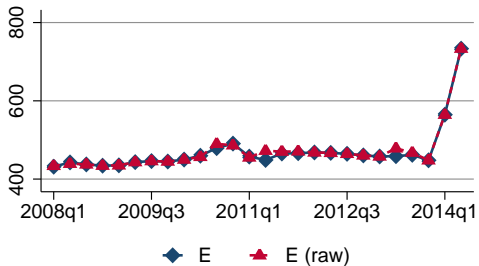
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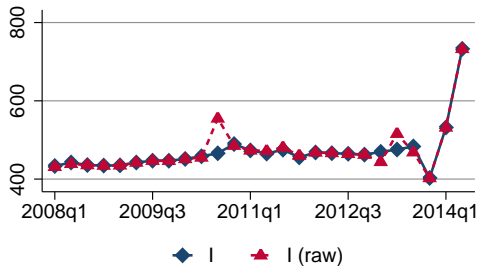
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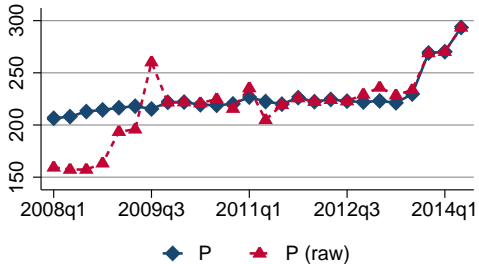
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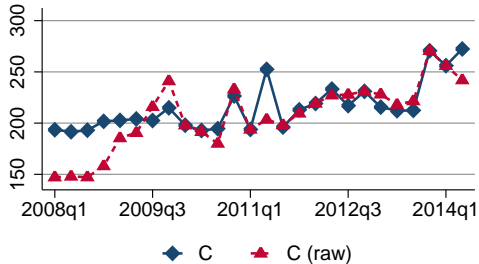
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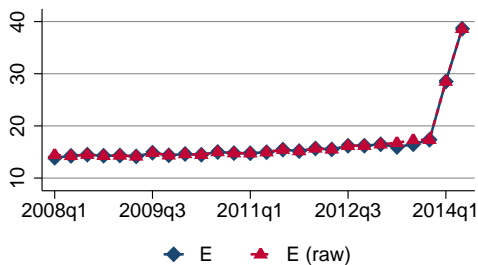
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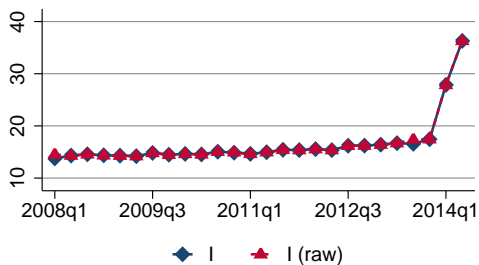
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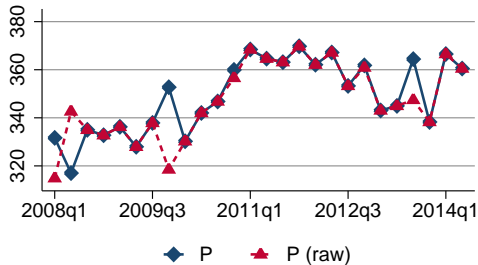
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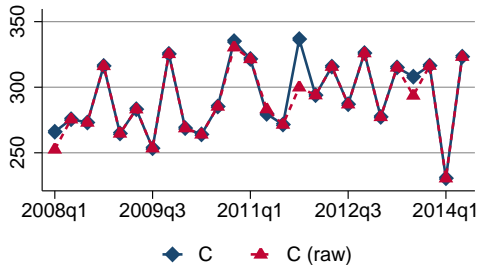
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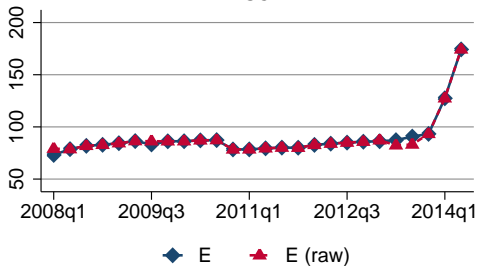
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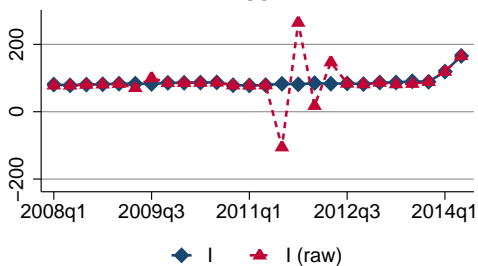
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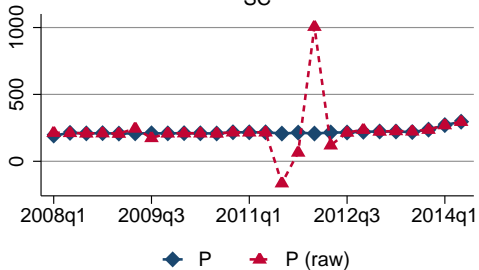
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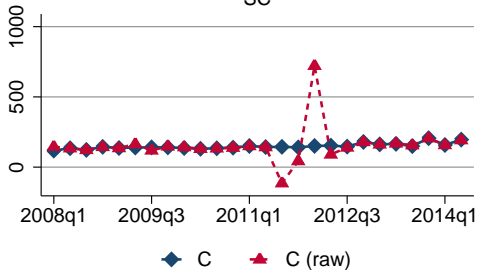
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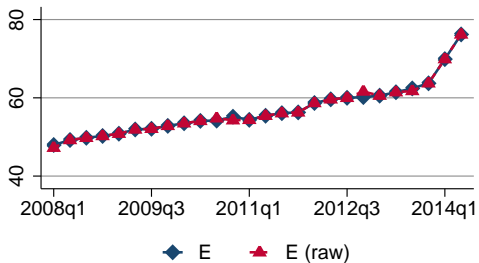
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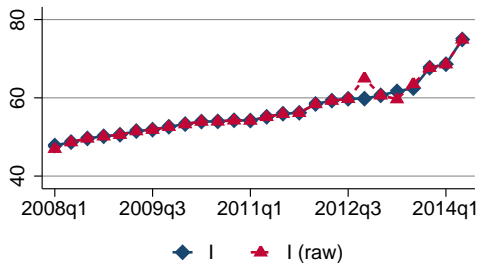
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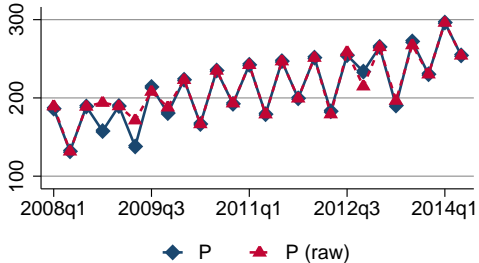
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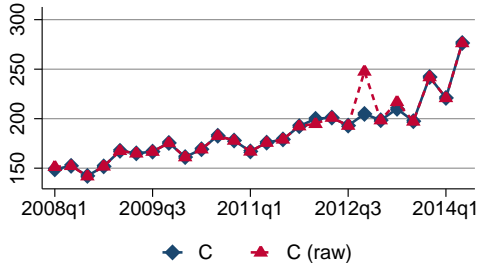
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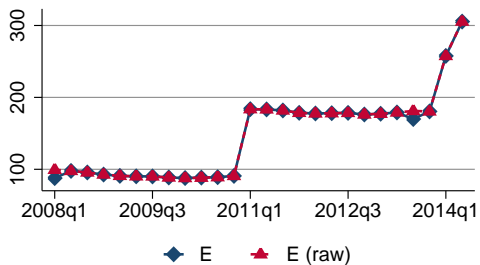
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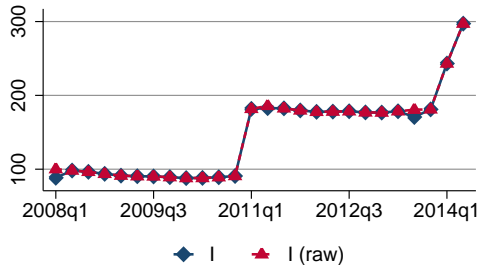
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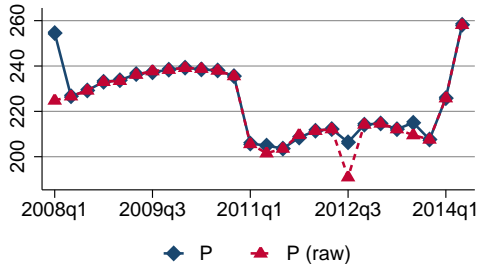
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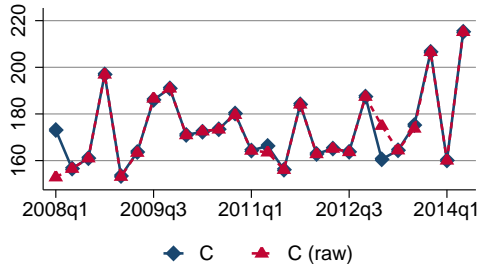
Coverage  
TN



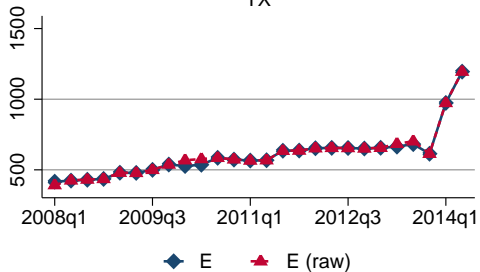
Premium  
TN



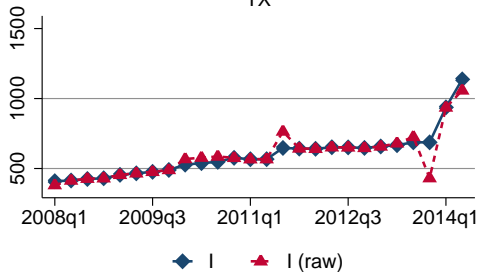
Average Cost  
TN



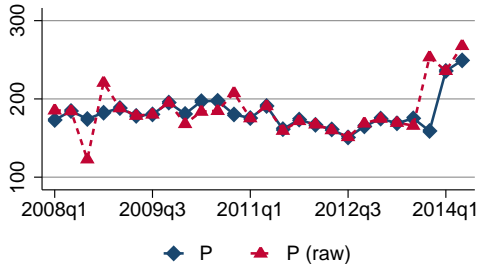
Enrollment  
TX



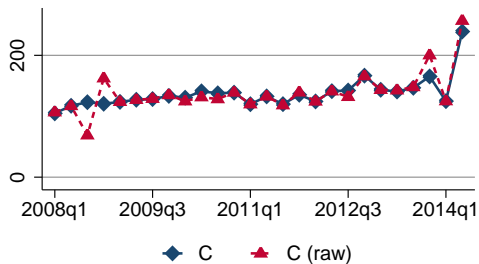
Coverage  
TX



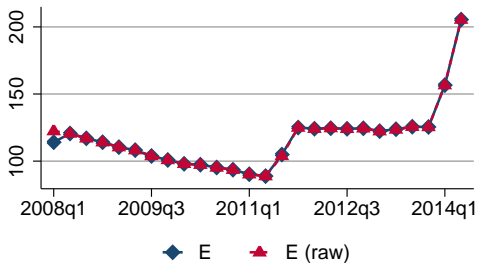
Premium  
TX



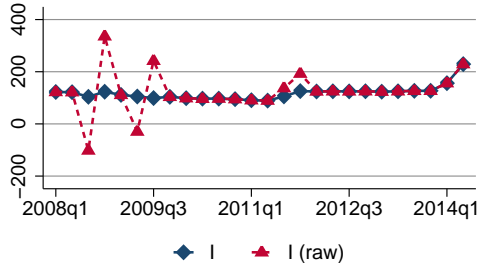
Average Cost  
TX



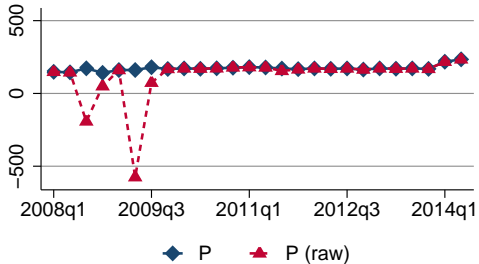
Enrollment  
UT



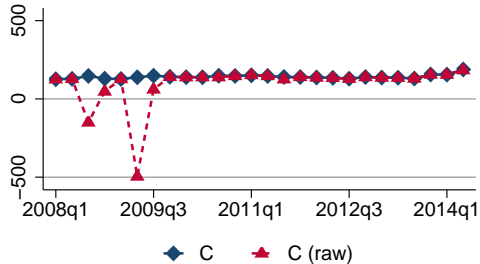
Coverage  
UT



Premium  
UT

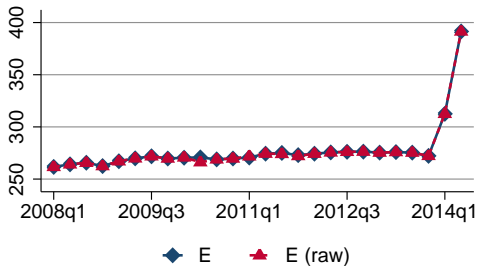


Average Cost  
UT

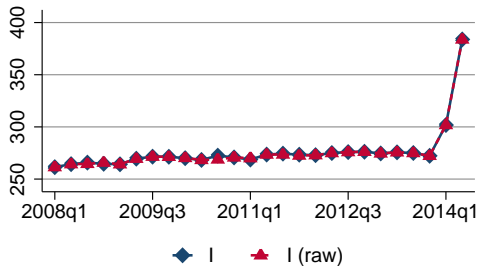




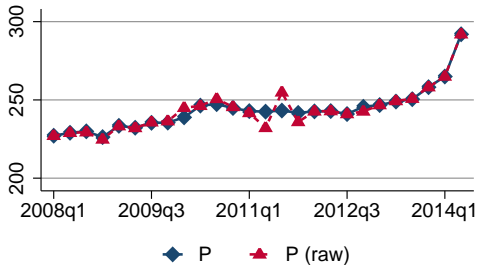
Enrollment  
VA



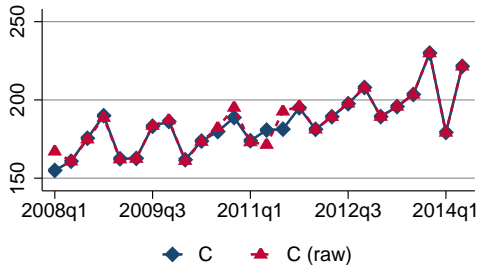
Coverage  
VA



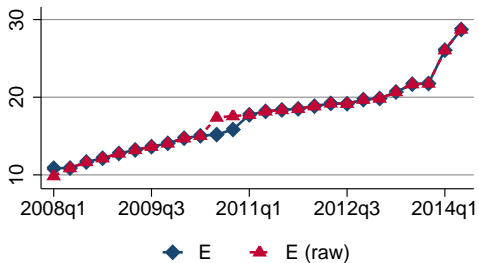
Premium  
VA



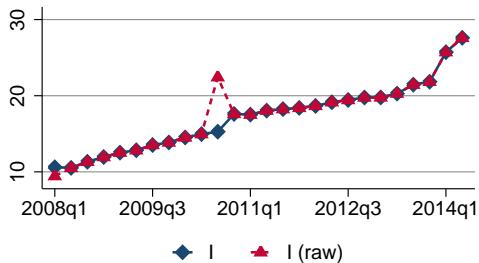
Average Cost  
VA



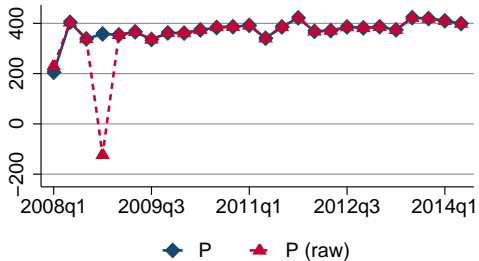
Enrollment  
VT



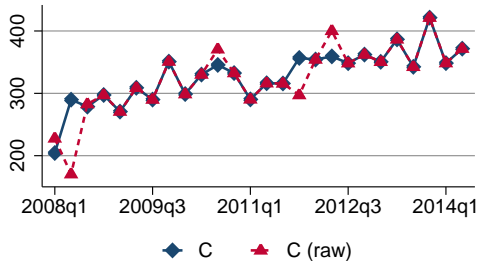
Coverage  
VT



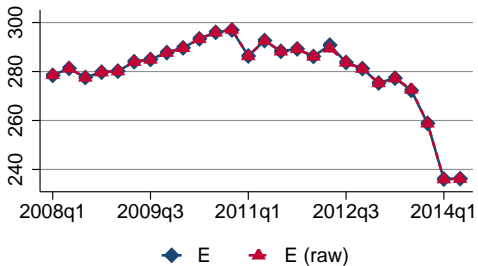
Premium  
VT



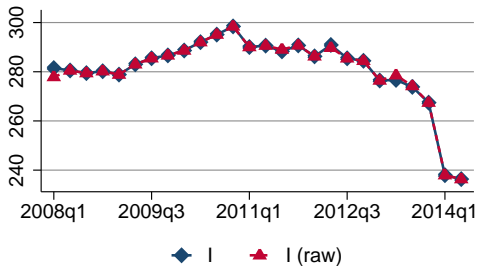
Average Cost  
VT



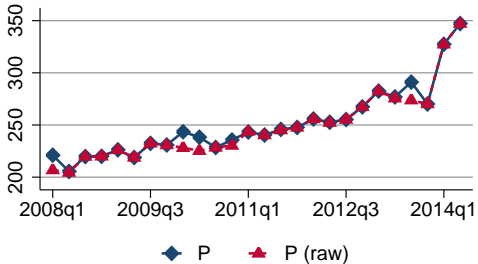
Enrollment  
WA



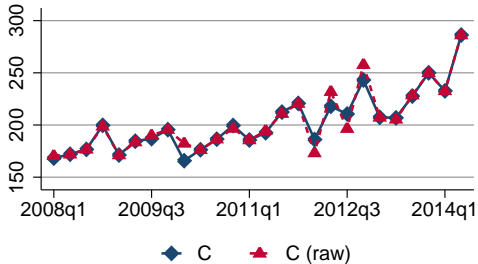
Coverage  
WA



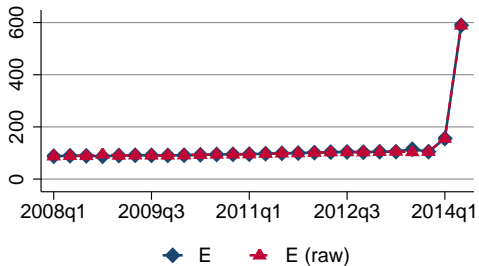
Premium  
WA



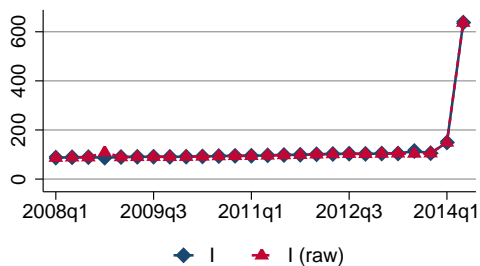
Average Cost  
WA



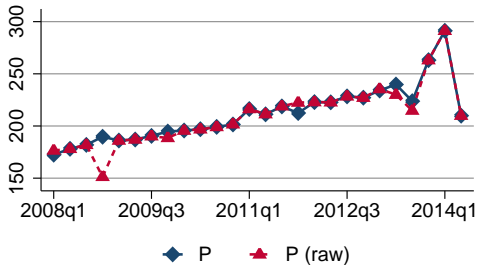
Enrollment  
WI



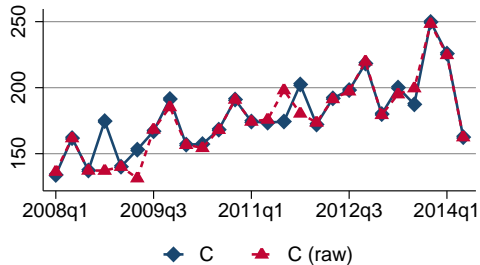
Coverage  
WI



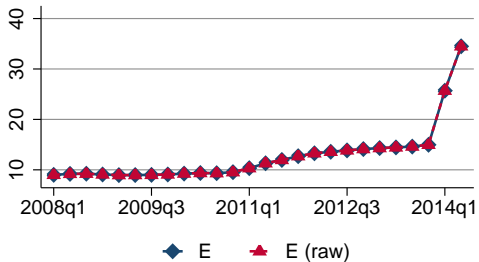
Premium  
WI



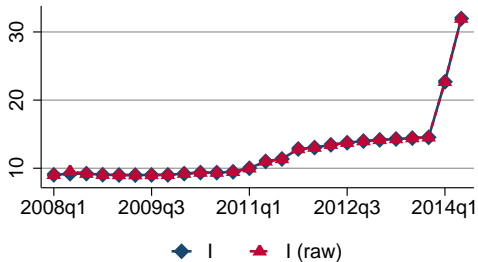
Average Cost  
WI



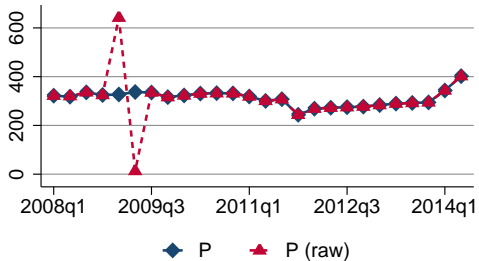
Enrollment  
WV



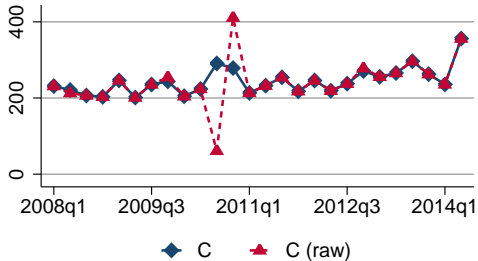
Coverage  
WV



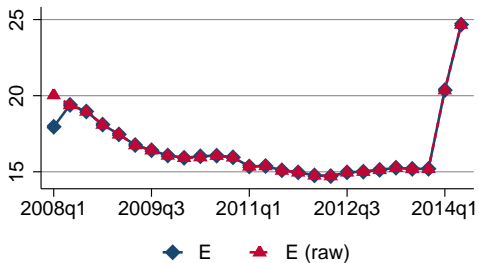
Premium  
WV



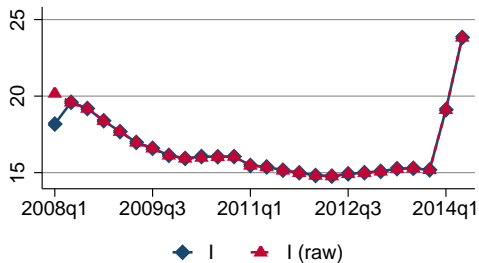
Average Cost  
WV



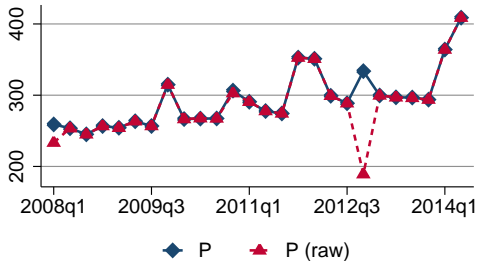
Enrollment  
WY



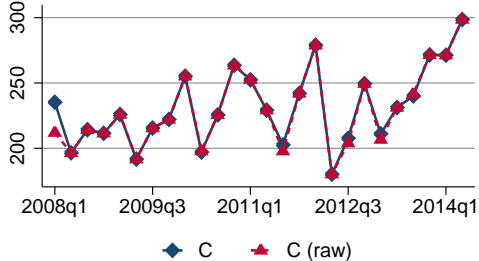
Coverage  
WY



Premium  
WY



Average Cost  
WY



## **II. Robustness to Imputation**

To test the robustness of my results to the imputation procedure, I perform my analysis using the raw data. The following tables that I report support my claim that my imputations to the data do not have a material impact on my results and conclusions.

**Summary Statistics - Raw Data**

	Coverage (Monthly Average, Thousands of Persons)		Premium (Monthly Average, \$)		Average Cost (Monthly Average \$)		Adverse Selection?	Markup Increase?
	I <sup>*,pre</sup>	I <sup>*,post</sup>	P <sup>*,pre</sup>	P <sup>*,post</sup>	AC <sup>*,pre</sup>	AC <sup>*,post</sup>		
AK	10	65	386	346	247	187	1	1
AL	188	174	187	278	160	218	1	1
AR	77	193	329	271	268	181	1	1
AZ	127	179	235	254	180	192	0	1
CA*	871	226	218	243	178	256	1	0
CO	218	257	227	260	187	195	0	1
CT	57	100	336	403	284	250	1	1
DC	13	29	281	291	301	251	1	1
DE	11	21	300	346	188	279	0	0
FL	837	1,194	198	274	161	191	0	1
GA	419	557	189	261	137	167	0	1
HI	29	28	225	242	195	230	1	0
IA	126	180	284	265	249	236	1	0
ID	92	110	203	242	157	200	0	0
IL	331	524	260	326	219	267	0	1
IN	108	225	265	364	212	241	0	1
KS	79	139	153	200	118	166	0	0
KY	137	193	254	290	259	205	1	1
LA	162	227	244	292	178	198	0	1
MA*	305	210	446	479	429	413	0	1
MD	121	236	221	224	172	164	1	1
ME	20	45	270	411	270	247	1	1
MI	250	375	216	281	203	204	0	1
MN	218	274	230	256	193	259	0	0
MO	212	223	221	266	161	201	0	1
MS	49	69	216	265	166	176	0	1
MT	11	21	240	415	230	295	0	1
NC	387	554	245	310	200	209	0	1
ND	43	46	251	310	274	269	1	1
NE	82	89	-31	277	-116	233	0	0
NH	31	39	329	341	202	192	1	1
NJ*	28	79	516	331	557	298	1	1
NM	52	69	204	318	199	243	0	1
NV	56	106	213	209	176	163	1	1
NY	105	303	396	371	365	238	1	1
OH	322	301	305	280	237	207	0	1
OK	87	135	191	263	157	205	0	1
OR	137	199	311	273	276	271	1	0
PA	484	632	251	284	240	248	0	1
RI	17	32	366	363	312	283	1	1
SC	87	143	328	285	242	178	1	1
SD	64	72	243	274	221	250	0	1
TN	214	270	202	244	169	190	0	1
TX	753	997	168	253	154	195	0	1
UT	119	193	249	228	199	173	1	1
VA	278	343	253	280	197	203	0	1
VT	23	27	455	404	387	360	1	0
WA	285	237	281	337	219	259	1	1
WI	105	393	221	225	186	174	1	1
WV	15	27	271	378	277	306	0	1
WY	13	21	314	389	239	286	0	1
<b>Summary*</b>	7,666	10,864	231	280	192	210	21	39
<b>Summary</b>	8,869	11,379	238	283	200	215	23	41

\*States with data anomalies omitted from state-level welfare regression analysis. MA is also omitted.

Data used are raw (*i.e.* non-imputed).

Source: Author's calculations from SNL with exchange enrollment from ASPE and population from Census. Post values are averages from 2014Q1 and 2014Q2, weighted by average monthly enrollment. Pre values are an estimate of what the post value would have been absent the implementation of the ACA. They are obtained by estimating a seasonally-adjusted trend regression for each series from 2008Q1 to 2014Q2, omitting 2013Q4 and allowing for a separate intercept for 2014. The pre value reflects the post value minus the 2014 intercept. See text for more details.



### Impact of State Policies on Welfare by State - Raw Data

	Calibrated Annual Penalty (\$)		
	12 $\pi$ = 1000	12 $\pi$ = 1500	12 $\pi$ = 2000
<b>Univariate Regression Results</b>			
<b>Direct Enforcement</b>	-36.21 [-56.52,-20.95]***	-33.70 [-52.21,-18.62]***	-31.20 [-45.68,-16.69]***
<b>State Exchange</b>	24.33 [-15.37,66.69]	24.21 [-12.60,63.91]	24.08 [-9.90,62.56]
<b>Exchange Glitches</b>	-9.77 [-49.69,22.55]	-10.63 [-49.48,20.53]	-11.50 [-49.38,16.62]
<b>Medicaid Expansion</b>	24.23 [-4.15,56.61]*	24.22 [-2.36,54.60]*	24.21 [0.84,53.26]**
<b>Non-Grandfathered Plans</b>	-11.84 [-44.10,28.49]	-10.73 [-42.74,23.51]	-9.63 [-39.05,25.73]
<b>Community Rating</b>	18.94 [-15.53,56.48]	19.25 [-15.11,53.54]	19.55 [-13.05,49.52]
<b>Guaranteed Issue</b>	33.06 [-4.50,74.44]*	34.15 [-2.28,74.28]*	35.25 [4.63,73.97]**
<b>Number of Insurers</b>	-0.16 [-2.10,2.52]	-0.15 [-2.20,2.46]	-0.14 [-1.90,2.58]
<b>Multivariate Regression Results</b>			
<b>Direct Enforcement</b>	-27.51 [-55.87,-3.39]**	-24.63 [-53.03,-1.27]**	-21.75 [-44.61,0.08]*
<b>State Exchange</b>	30.13 [-29.99,93.08]	31.36 [-35.79,94.34]	32.60 [-22.73,92.92]
<b>Exchange Glitches</b>	-44.27 [-107.23,21.52]	-44.97 [-101.26,15.92]	-45.68 [-98.86,9.80]*
<b>Medicaid Expansion</b>	7.94 [-25.27,60.93]	8.29 [-25.37,63.00]	8.64 [-21.64,59.93]
<b>Non-Grandfathered Plans</b>	3.43 [-36.76,68.23]	5.21 [-35.61,77.56]	6.99 [-29.28,73.77]
<b>Community Rating</b>	-2.41 [-37.24,28.61]	-2.58 [-33.39,26.97]	-2.76 [-32.38,29.15]
<b>Guaranteed Issue</b>	18.87 [-22.26,52.64]	20.49 [-17.39,48.66]	22.10 [-14.44,50.18]
<b>Number of Insurers</b>	-0.17 [-2.29,2.02]	-0.24 [-2.36,1.75]	-0.30 [-2.24,1.59]
<b>Constant</b>	-13.33 [-88.64,31.63]	-20.91 [-97.76,26.89]	-28.48 [-104.24,15.06]

Regressions run using raw (*i.e.* non-imputed) data.

Each column of the multivariate regression results reports all coefficients from a single state-level regression of the welfare impact of the ACA for a given calibrated annual penalty on state policy variables and a constant. Each cell of the univariate regression results reports the coefficient from a separate regression on each policy variable and a constant (coefficient not reported). See text for more details.

\*, \*\*, \*\*\* indicate significance at the 10%, 5%, 1% levels, respectively, block-bootstrapped by state.

**Welfare Results by State - Raw Data**

	Calibrated Annual Penalty (\$)			Calibrated Annual Penalty (\$)			Calibrated Annual Penalty (\$)		
	12π = 1,000			12π = 1,500			12π = 2,000		
	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)
	$W_{full}/I^{*post}$	$W_{sel}/I^{*post}$	$12\pi^*$	$W_{full}/I^{*post}$	$W_{sel}/I^{*post}$	$12\pi^*$	$W_{full}/I^{*post}$	$W_{sel}/I^{*post}$	$12\pi^*$
AK	125	165	34,884	107	124	4,438	90	97	3,286
AL	-61	-96	4,814	-59	-77	6,235	-57	-69	7,039
AR	81	135	-73	69	89	16,748	56	64	4,257
AZ	-5	-7	351	-11	-13	364	-17	-19	371
CA*	-109	-139	469	-49	-112	572	10	-71	646
CO	-6	-11	256	-9	-14	253	-12	-17	252
CT	53	-36	1,492	44	270	816	35	62	3,631
DC	19	136	493	8	8	1,852	-4	-19	1,206
DE	-49	-21	-533	-58	-32	-532	-68	-42	-532
FL	-20	-72	323	-27	-57	254	-33	-57	223
GA	-19	-55	212	-24	-46	138	-29	-47	104
HI	-35	-29	8,305	-34	-30	8,999	-33	-31	9,430
IA	8	8	818	1	2	775	-5	-4	754
ID	-39	-37	-1,483	-43	-41	-1,651	-46	-44	-1,754
IL	-36	-54	-52	-43	-57	-108	-51	-63	-141
IN	2	-348	936	-9	-83	1,041	-19	-74	1,077
KS	-41	-40	-225	-50	-49	-255	-59	-58	-273
KY	45	-38	1,232	39	162	32	33	63	6,078
LA	-6	-18	471	-12	-22	489	-18	-28	497
MA*	20	62	-179	29	62	71	38	68	116
MD	12	11	898	2	0	866	-8	-11	851
ME	39	10	2,139	28	3	2,105	16	18,852	1,937
MI	1	-46	902	-6	-35	907	-13	-39	908
MN	-64	-39	-2,202	-69	-48	-2,369	-73	-55	-2,485
MO	-38	-40	-5,391	-39	-41	-6,113	-40	-41	-6,537
MS	-1	-14	710	-7	-18	734	-12	-24	744
MT	-38	21	1,682	-48	-1,667	1,193	-58	-342	988
NC	2	-28	883	-5	-25	920	-11	-30	931
ND	3	5	1,547	1	-1	1,399	0	-3	1,378
NE	-334	-221	-14,087	-336	-250	-17,186	-337	-268	-19,821
NH	30	37	2,572	25	28	2,410	21	21	2,347
NJ*	146	5,598	823	132	541	566	119	285	257
NM	-40	-484	481	-45	-138	-21	-50	-108	-228
NV	11	10	892	1	-1	832	-9	-12	807
NY	112	-21	1,346	98	1,381	1,082	85	304	818
OH	30	32	-7,542	31	33	-6,148	33	34	-5,642
OK	-38	-63	-76	-46	-64	-156	-53	-68	-201
OR	-3	1	180	-9	-4	173	-16	-9	170
PA	-11	-21	152	-16	-24	144	-21	-28	141
RI	34	45	2,372	24	25	1,753	14	11	1,596
SC	73	99	-908	65	77	6,158	57	63	4,275
SD	-30	-31	-1,812	-32	-33	-1,994	-34	-35	-2,097
TN	-19	-28	-196	-23	-30	-244	-27	-34	-268
TX	-38	-103	-140	-43	-78	-378	-48	-75	-495
UT	25	26	1,716	17	17	1,472	9	9	1,378
VA	-1	-4	579	-5	-8	591	-9	-12	597
VT	26	21	3,125	23	21	2,845	20	19	2,706
WA	-50	-59	2,470	-46	-50	2,849	-42	-44	3,063
WI	8	4	754	-7	-14	715	-22	-30	698
WV	-27	-2,124	856	-36	-171	623	-45	-129	555
WY	-21	-45	293	-29	-47	285	-37	-52	280
<b>Summary*</b>	-9	-47		-15	8		-21	51	
<b>Summary</b>	-9	-8		-14	11		-19	51	

Data used are raw (i.e. non-imputed).

\*States with data anomalies omitted from state-level welfare regression analysis. MA is also omitted.

Post-reform period defined using only data from Q1 2014.

### **III. Robustness to Focusing Exclusively on 2014Q1 or 2014Q2**

I perform robustness to my model by slightly modifying my definition of the *After* variable. In one specification, I implement my empirical framework using only data from 2014Q1 to define the post-reform period. In a second specification, I rely only on the data from 2014Q2 to define the post-reform period. I report these results below.

**Summary Statistics - 2014Q1 ONLY**

	Coverage (Monthly Average, Thousands of Persons)		Premium (Monthly Average, \$)		Average Cost (Monthly Average \$)		Adverse Selection?	Markup Increase?
	I <sup>*,pre</sup>	I <sup>*,post</sup>	P <sup>*,pre</sup>	P <sup>*,post</sup>	AC <sup>*,pre</sup>	AC <sup>*,post</sup>		
AK	10	54	385	362	232	108	1	1
AL	181	158	185	270	155	218	1	1
AR	99	171	178	256	141	148	0	1
AZ	127	161	237	251	177	178	0	1
CA*	869	269	221	221	165	278	1	0
CO	215	239	221	252	178	157	1	1
CT	58	85	337	419	256	164	1	1
DC	13	25	284	268	300	218	1	1
DE	14	17	364	325	259	213	1	1
FL	843	920	192	255	150	173	0	1
GA	401	490	190	240	149	147	1	1
HI	32	37	260	193	237	192	1	0
IA	137	151	236	287	215	199	1	1
ID	93	100	201	236	151	177	0	1
IL	329	459	259	327	204	161	1	1
IN	96	192	273	356	216	228	0	1
KS	75	110	153	179	116	142	0	1
KY	139	187	252	286	255	169	1	1
LA	163	205	239	256	168	169	0	1
MA*	321	214	436	470	376	393	1	1
MD	123	203	218	208	173	151	1	1
ME	17	36	416	406	379	204	1	1
MI	244	318	210	273	193	173	1	1
MN	217	266	229	260	189	223	0	0
MO	210	213	226	251	158	166	0	1
MS	49	67	214	246	169	172	0	1
MT	11	19	232	403	215	177	1	1
NC	392	491	240	291	192	195	0	1
ND	43	45	279	290	279	261	1	1
NE	78	95	266	276	205	224	0	0
NH	30	25	327	318	192	194	1	0
NJ*	22	76	552	321	576	310	1	1
NM	62	59	199	331	174	157	0	1
NV	50	94	223	196	177	159	1	0
NY	216	260	351	358	352	223	1	1
OH	285	279	213	275	141	183	1	1
OK	86	114	191	264	142	122	1	1
OR	150	182	231	256	193	207	0	1
PA	482	532	229	270	222	256	0	1
RI	16	28	368	367	305	231	1	1
SC	86	119	219	271	164	158	1	1
SD	63	69	280	296	212	221	0	1
TN	212	243	204	226	162	160	1	1
TX	733	937	165	236	143	125	1	1
UT	122	156	178	218	137	155	0	1
VA	276	302	252	265	192	179	1	1
VT	23	26	389	410	360	348	1	1
WA	283	238	288	327	212	233	1	1
WI	108	149	244	291	194	226	0	1
WV	15	23	265	343	262	236	1	1
WY	14	19	332	364	257	271	0	1
<b>Summary*</b>	7,724	9,368	224	270	183	180	29	43
<b>Summary</b>	8,937	9,926	232	274	189	188	32	45

\*States with data anomalies omitted from state-level welfare regression analysis. MA is also omitted.

Post-reform period defined using only data from 2014Q1.

Source: Author's calculations from SNL with exchange enrollment from ASPE and population from Census. Post values are from 2014Q1. Pre values are an estimate of what the post value would have been absent the implementation of the ACA. They are obtained by estimating a seasonally-adjusted trend regression for each series from 2008Q1 to 2014Q1, omitting 2013Q4 and allowing for a separate intercept for 2014. The pre value reflects the post value minus the 2014 intercept. See text for more details.

**Summary Statistics - 2014Q2 ONLY**

	Coverage (Monthly Average, Thousands of Persons)		Premium (Monthly Average, \$)		Average Cost (Monthly Average \$)		Adverse Selection?	Markup Increase?
	I <sup>*,pre</sup>	I <sup>*,post</sup>	P <sup>*,pre</sup>	P <sup>*,post</sup>	AC <sup>*,pre</sup>	AC <sup>*,post</sup>		
AK	10	76	394	335	228	243	0	0
AL	185	189	184	285	163	218	0	1
AR	100	215	177	283	141	207	0	1
AZ	129	196	231	257	187	204	0	1
CA*	873	184	226	274	175	224	1	0
CO	220	275	218	267	186	228	0	1
CT	58	115	336	392	292	314	0	1
DC	13	33	279	308	300	275	1	1
DE	14	24	366	360	251	324	0	0
FL	854	1,489	193	282	157	199	0	1
GA	422	624	181	277	148	183	0	1
HI	34	20	253	334	236	301	1	1
IA	143	208	251	249	187	263	0	0
ID	92	120	202	246	157	219	0	0
IL	332	589	261	326	215	349	0	0
IN	98	258	278	370	225	251	0	1
KS	82	168	147	213	110	182	0	0
KY	141	198	249	293	252	240	1	1
LA	164	249	240	322	176	223	0	1
MA*	331	206	440	489	424	433	1	1
MD	121	268	220	236	174	174	0	1
ME	17	53	408	414	427	276	1	1
MI	248	431	215	288	204	227	0	1
MN	219	283	231	253	193	293	0	0
MO	213	233	218	280	160	233	0	0
MS	49	71	217	283	163	182	0	1
MT	11	23	219	425	214	392	0	1
NC	398	617	235	325	210	226	0	1
ND	43	47	288	330	265	276	0	1
NE	80	83	239	279	212	243	0	1
NH	31	54	327	352	210	191	1	1
NJ*	34	81	508	339	525	286	1	1
NM	63	80	195	309	179	307	0	0
NV	50	117	219	219	196	166	1	1
NY	208	346	355	381	345	249	1	1
OH	292	322	212	284	154	227	0	0
OK	88	155	191	262	148	266	0	0
OR	150	216	234	319	196	324	0	0
PA	486	733	228	294	233	272	0	1
RI	17	36	367	361	312	323	0	0
SC	86	166	224	296	167	196	0	1
SD	64	75	219	254	217	276	0	0
TN	214	297	199	258	163	215	0	1
TX	741	1,137	168	249	152	239	0	0
UT	121	229	176	234	138	188	0	1
VA	279	384	253	292	199	221	0	1
VT	23	28	417	399	397	372	1	1
WA	285	236	281	347	223	286	1	1
WI	109	637	245	210	207	163	1	1
WV	15	32	266	402	257	356	0	1
WY	14	24	321	409	218	299	0	1
<b>Summary*</b>	7,828	12,461	223	286	189	233	10	33
<b>Summary</b>	9,066	12,932	232	289	198	237	13	35

\*States with data anomalies omitted from state-level welfare regression analysis. MA is also omitted.

Post-reform period defined using only data from 2014Q2.

Source: Author's calculations from SNL with exchange enrollment from ASPE and population from Census. Post values are from 2014Q2. Pre values are an estimate of what the post value would have been absent the implementation of the ACA. They are obtained by estimating a seasonally-adjusted trend regression for each series from 2008Q1 to 2014Q2, omitting 2013Q4 and 2014Q1 and allowing for a separate intercept for 2014. The pre value reflects the post value minus the 2014 intercept. See text for more details.

**Impact of State Policies on Welfare by State - Q1 2014 ONLY**

	Calibrated Annual Penalty (\$)		
	12 $\pi$ = 1000	12 $\pi$ = 1500	12 $\pi$ = 2000
<b>Univariate Regression Results</b>			
<b>Direct Enforcement</b>	-0.56 [-64.38,22.50]	0.03 [-58.10,21.11]	0.62 [-52.10,21.59]
<b>State Exchange</b>	26.17 [-12.45,70.69]	26.07 [-10.81,66.60]	25.97 [-7.61,65.55]
<b>Exchange Glitches</b>	-14.44 [-40.98,19.02]	-16.57 [-40.71,10.06]	-18.70 [-39.56,10.13]
<b>Medicaid Expansion</b>	23.67 [-4.25,48.69]*	23.39 [-0.57,53.40]*	23.11 [-0.99,49.95]*
<b>Non-Grandfathered Plans</b>	-19.58 [-49.01,7.18]	-18.39 [-49.69,8.13]	-17.20 [-45.86,7.98]
<b>Community Rating</b>	11.85 [-20.55,46.43]	12.74 [-20.78,48.04]	13.63 [-18.07,51.36]
<b>Guaranteed Issue</b>	5.80 [-34.51,53.45]	7.45 [-31.47,57.28]	9.11 [-28.07,51.93]
<b>Number of Insurers</b>	-0.88 [-3.09,1.69]	-0.78 [-2.95,1.94]	-0.68 [-2.61,2.04]
<b>Multivariate Regression Results</b>			
<b>Direct Enforcement</b>	13.03 [-70.80,39.23]	13.51 [-61.15,37.75]	13.99 [-47.01,34.85]
<b>State Exchange</b>	35.86 [-17.67,95.25]	37.18 [-16.27,90.76]	38.49 [-14.46,89.70]
<b>Exchange Glitches</b>	-64.66 [-123.11,-3.83]**	-67.25 [-123.38,-13.60]**	-69.85 [-123.28,-8.82]**
<b>Medicaid Expansion</b>	22.00 [-25.82,48.05]	21.51 [-21.88,47.34]	21.01 [-20.73,44.89]
<b>Non-Grandfathered Plans</b>	-6.87 [-43.56,23.33]	-5.80 [-39.50,23.38]	-4.73 [-34.45,23.70]
<b>Community Rating</b>	-0.21 [-33.01,32.09]	1.07 [-27.85,30.79]	2.35 [-24.97,32.37]
<b>Guaranteed Issue</b>	-11.60 [-51.84,36.80]	-10.47 [-49.09,39.42]	-9.34 [-45.35,35.19]
<b>Number of Insurers</b>	-0.69 [-3.53,2.46]	-0.62 [-3.37,2.15]	-0.54 [-3.09,2.66]
<b>Constant</b>	11.01 [-17.25,52.04]	5.36 [-20.26,46.77]	-0.30 [-25.50,38.23]

Post-reform period defined using only data from Q1 2014.

Each column of the multivariate regression results reports all coefficients from a single state-level regression of the welfare impact of the ACA for a given calibrated annual penalty on state policy variables and a constant. Each cell of the univariate regression results reports the coefficient from a separate regression on each policy variable and a constant (coefficient not reported). See text for more details.

\*, \*\*, \*\*\* indicate significance at the 10%, 5%, 1% levels, respectively, block-bootstrapped by state.

**Impact of State Policies on Welfare by State - Q2 2014 ONLY**

	<b>Calibrated Annual Penalty (\$)</b>		
	<b>12<math>\pi</math> = 1000</b>	<b>12<math>\pi</math> = 1500</b>	<b>12<math>\pi</math> = 2000</b>
<b>Univariate Regression Results</b>			
<b>Direct Enforcement</b>	-49.98 [-71.48,-20.13]***	-47.92 [-68.73,-15.09]***	-45.86 [-67.51,-10.12]**
<b>State Exchange</b>	16.32 [-32.84,67.25]	18.37 [-31.41,65.69]	20.41 [-26.16,65.83]
<b>Exchange Glitches</b>	-21.96 [-78.26,47.69]	-21.80 [-77.24,45.98]	-21.64 [-76.21,41.60]
<b>Medicaid Expansion</b>	-10.43 [-47.32,26.54]	-8.91 [-43.56,26.88]	-7.40 [-40.61,27.75]
<b>Non-Grandfathered Plans</b>	-14.68 [-50.67,22.49]	-15.29 [-49.02,19.13]	-15.90 [-49.69,18.92]
<b>Community Rating</b>	6.26 [-33.59,51.14]	8.44 [-32.62,52.15]	10.62 [-26.96,54.55]
<b>Guaranteed Issue</b>	10.63 [-36.77,66.22]	12.82 [-31.81,64.16]	15.01 [-29.62,66.29]
<b>Number of Insurers</b>	0.02 [-2.17,2.87]	-0.03 [-2.34,2.49]	-0.09 [-2.50,2.39]
<b>Multivariate Regression Results</b>			
<b>Direct Enforcement</b>	-59.00 [-95.88,-19.66]***	-55.73 [-92.37,-16.63]***	-52.47 [-88.43,-10.30]**
<b>State Exchange</b>	56.43 [-4.96,113.68]*	58.84 [-0.05,120.36]*	61.25 [5.65,120.69]**
<b>Exchange Glitches</b>	-56.15 [-143.53,35.83]	-58.50 [-146.87,32.41]	-60.86 [-138.67,23.67]
<b>Medicaid Expansion</b>	-47.96 [-83.07,-0.43]**	-47.03 [-84.30,2.61]*	-46.10 [-88.03,2.51]*
<b>Non-Grandfathered Plans</b>	-15.68 [-51.06,20.35]	-14.77 [-46.64,20.56]	-13.87 [-46.43,22.15]
<b>Community Rating</b>	-6.93 [-43.01,40.65]	-6.01 [-43.04,40.03]	-5.09 [-40.60,41.41]
<b>Guaranteed Issue</b>	12.40 [-37.83,53.12]	13.93 [-35.95,61.80]	15.46 [-37.05,60.77]
<b>Number of Insurers</b>	0.16 [-2.17,3.40]	0.07 [-2.06,3.36]	-0.02 [-2.11,2.95]
<b>Constant</b>	-7.20 [-38.79,21.70]	-16.06 [-45.33,10.72]	-24.91 [-51.25,2.52]*

Post-reform period defined using only data from Q2 2014.

Each column of the multivariate regression results reports all coefficients from a single state-level regression of the welfare impact of the ACA for a given calibrated annual penalty on state policy variables and a constant. Each cell of the univariate regression results reports the coefficient from a separate regression on each policy variable and a constant (coefficient not reported). See text for more details.

\*, \*\*, \*\*\* indicate significance at the 10%, 5%, 1% levels, respectively, block-bootstrapped by state.

**Welfare Results by State - Q1 2014 ONLY**

	Calibrated Annual Penalty (\$)			Calibrated Annual Penalty (\$)			Calibrated Annual Penalty (\$)		
	12 $\pi$ = 1,000			12 $\pi$ = 1,500			12 $\pi$ = 2,000		
	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)
$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	12 $\pi^*$	$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	12 $\pi^*$	$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	12 $\pi^*$	
AK	205	-32	1,262	188	1,857	1,143	171	525	1,025
AL	-67	-88	3,381	-64	-76	4,199	-61	-68	4,688
AR	8	-102	1,064	-1	-41	1,143	-10	-45	1,158
AZ	4	3	804	0	-2	809	-5	-7	811
CA*	-144	-146	318	-97	-149	432	-51	-135	522
CO	22	55	8,165	20	31	4,400	18	23	3,939
CT	118	-57	3,724	111	-86	3,230	105	-116	2,266
DC	50	537	574	40	99	43	30	45	5,464
DE	55	60	9,393	51	53	6,077	47	48	5,207
FL	-20	-44	-1,161	-22	-36	-1,501	-24	-34	-1,651
GA	6	4	1,230	2	-4	1,212	-2	-9	1,207
HI	39	32	7,777	37	32	6,381	35	31	5,792
IA	16	82	61,048	15	26	3,763	13	17	3,359
ID	-24	-27	-2,472	-26	-28	-2,735	-27	-29	-2,879
IL	57	-54	2,091	51	722	896	45	122	9,973
IN	16	-132	1,118	6	-37	1,285	-5	-43	1,323
KS	-24	-24	-172	-30	-30	-187	-37	-37	-195
KY	80	-62	2,335	74	9,918	1,290	69	298	-151
LA	7	6	978	2	1	982	-2	-4	984
MA*	-34	-37	1,261	-24	-22	1,351	-14	-10	1,395
MD	21	22	1,460	13	12	1,283	4	3	1,216
ME	170	-39	2,734	159	-48	2,416	148	317,790	1,954
MI	22	2,583,734	996	17	36	2,929	12	9	2,319
MN	-32	-30	-1,014	-36	-34	-1,113	-40	-38	-1,172
MO	-8	-10	-4,590	-8	-9	-4,801	-8	-9	-4,900
MS	2	-3	759	-3	-9	769	-9	-15	773
MT	64	-4	3,146	55	8	3,081	46	-8	2,948
NC	3	-4	969	-1	-9	986	-5	-14	992
ND	16	23	5,883	15	18	4,918	13	15	4,626
NE	-16	-13	-466	-19	-17	-486	-23	-21	-497
NH	-23	-21	1,589	-18	-18	1,601	-13	-14	1,608
NJ*	138	336	193	123	205	-25	108	154	-233
NM	14	-24	-909	15	-115	-209	16	153	-41,353
NV	14	14	886	4	5	816	-6	-4	783
NY	122	-130	3,834	119	-239	2,237	115	835	-160
OH	-44	-57	14,329	-43	-51	16,965	-43	-48	18,441
OK	31	-48	1,503	26	85	4,743	20	28	2,931
OR	-12	-16	-141	-16	-19	-158	-20	-22	-167
PA	-35	-39	-2,591	-37	-40	-2,920	-39	-41	-3,106
RI	83	1,470	703	74	196	-20	66	112	11,101
SC	17	37	1,863	12	8	1,656	6	-3	1,617
SD	-6	-7	-297	-8	-9	-312	-10	-11	-319
TN	4	3	997	1	-1	985	-2	-4	981
TX	22	-34	1,338	17	44	3,229	13	11	2,444
UT	-14	-23	23	-19	-26	0	-24	-30	-11
VA	15	21	3,480	13	16	3,123	12	13	3,001
VT	11	16	2,141	9	10	1,937	6	6	1,871
WA	-31	-37	2,076	-27	-29	2,270	-23	-23	2,367
WI	-23	-32	-101	-29	-36	-140	-35	-41	-162
WV	27	-5	1,545	20	156	793	12	6	2,390
WY	0	-4	599	-6	-11	629	-12	-17	643
<b>Summary*</b>	8	87,793		5	231		1	1,247	
<b>Summary</b>	4	82,850		2	215		0	1,174	

\*States with data anomalies omitted from state-level welfare regression analysis. MA is also omitted.

Post-reform period defined using only data from Q1 2014.



**Welfare Results by State - Q2 2014 ONLY**

	Calibrated Annual Penalty (\$)			Calibrated Annual Penalty (\$)			Calibrated Annual Penalty (\$)		
	12 $\pi$ = 1,000			12 $\pi$ = 1,500			12 $\pi$ = 2,000		
	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)
$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	12 $\pi^*$	$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	12 $\pi^*$	$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	12 $\pi^*$	
AK	67	54	911	49	53	944	31	45	966
AL	-55	-123	-10,276	-55	-88	-15,124	-56	-78	-17,688
AR	-41	-131	378	-52	-104	335	-63	-104	310
AZ	-11	-15	231	-19	-22	239	-26	-29	243
CA*	-174	-174	844	-95	-97	963	-17	-19	1,036
CO	-39	-44	-976	-43	-47	-1,127	-47	-50	-1,216
CT	-7	-31	583	-17	-38	613	-28	-47	626
DC	-4	-18	406	-16	-47	571	-29	-61	582
DE	-42	-8	-766	-52	-17	-753	-61	-25	-744
FL	-26	-104	436	-35	-79	391	-44	-79	368
GA	-23	-173	530	-30	-87	405	-36	-77	354
HI	-77	-80	1,225	-61	-59	1,464	-46	-41	1,610
IA	-69	-27	-1,776	-76	-36	-1,836	-82	-45	-1,880
ID	-55	-43	-1,380	-60	-50	-1,526	-65	-57	-1,623
IL	-118	-49	-1,645	-127	-65	-1,736	-136	-80	-1,806
IN	10	-200	973	-3	-69	1,106	-16	-69	1,152
KS	-57	-52	-277	-68	-63	-312	-78	-74	-336
KY	5	1	1,176	-1	-13	1,030	-7	-21	1,005
LA	-25	-63	255	-32	-57	207	-39	-60	181
MA*	-9	10	878	4	24	916	16	38	930
MD	7	3	742	-5	-10	743	-16	-23	743
ME	112	0	2,094	98	-3	1,997	84	15,057	1,841
MI	-20	-94	455	-29	-71	415	-38	-72	399
MN	-98	-43	-3,190	-103	-55	-3,380	-108	-65	-3,525
MO	-69	-60	-5,081	-71	-64	-5,840	-72	-67	-6,347
MS	-5	-37	646	-12	-33	664	-18	-37	672
MT	-143	-263	-92	-154	-226	-303	-165	-219	-458
NC	-6	-385	873	-13	-75	855	-21	-65	850
ND	-11	-20	-899	-13	-18	-1,004	-14	-19	-1,050
NE	-31	-34	-6,843	-31	-34	-7,652	-32	-34	-8,104
NH	56	108	3,804	47	62	2,757	39	42	2,548
NJ*	155	3,579	750	143	495	386	131	282	28
NM	-121	-102	-2,622	-125	-111	-3,133	-130	-118	-3,506
NV	20	25	1,658	8	3	1,179	-4	-13	1,077
NY	88	-32	1,996	80	31,583	1,405	72	370	649
OH	-68	-67	-4,121	-70	-69	-4,872	-72	-71	-5,361
OK	-101	-53	-1,248	-110	-68	-1,337	-120	-81	-1,404
OR	-116	-68	-2,035	-123	-82	-2,250	-129	-94	-2,412
PA	-44	-74	-278	-51	-72	-398	-58	-75	-463
RI	-6	-1	280	-17	-11	294	-28	-21	303
SC	-5	-44	687	-15	-43	735	-25	-50	757
SD	-63	-47	-2,922	-66	-53	-3,213	-69	-58	-3,407
TN	-46	-51	-626	-51	-56	-745	-57	-61	-816
TX	-82	-75	-963	-89	-83	-1,129	-96	-92	-1,242
UT	-39	-45	-41	-48	-54	-62	-58	-63	-75
VA	-14	-21	142	-20	-25	137	-25	-31	134
VT	20	22	2,721	17	17	2,318	13	13	2,167
WA	-73	-75	2,894	-69	-70	3,397	-65	-65	3,716
WI	27	29	1,530	10	8	1,032	-8	-11	902
WV	-81	-197	129	-92	-158	-17	-102	-153	-110
WY	-36	-42	50	-45	-50	42	-54	-58	38
<b>Summary*</b>	-35	-81		-43	820		-51	13	
<b>Summary</b>	-36	-58		-42	792		-48	14	

\*States with data anomalies omitted from state-level welfare regression analysis. MA is also omitted.

Post-reform period defined using only data from Q2 2014.

#### **IV. Robustness to Premiums and Average Costs**

Although the premium and average cost data are measured at the same time, they could contain differential information because actuaries must set premiums and individuals must pay them before incurring any costs. To exploit the differential informational content of each data series, I conduct two separate exercises: first, I use premium data to measure premiums *and* average costs in the model, and second, I use average cost data to measure average costs *and* premiums in the model. I report these results below.

## Premium

	Calibrated Annual Penalty (\$)		
	12 $\pi$ = 1000	12 $\pi$ = 1500	12 $\pi$ = 2000
	Univariate Regression Results		
<b>Direct Enforcement</b>	-17.88 [-34.18,9.84]	-16.36 [-30.69,13.38]	-14.84 [-27.95,15.41]
<b>State Exchange</b>	26.41 [14.54,37.33]***	27.64 [16.46,37.86]***	28.88 [16.41,38.61]***
<b>Exchange Glitches</b>	29.01 [8.82,51.37]***	28.27 [10.83,52.12]***	27.53 [7.93,48.99]***
<b>Medicaid Expansion</b>	13.44 [-2.20,26.86]*	14.30 [-0.51,28.09]*	15.16 [-0.39,29.73]*
<b>Non-Grandfathered Plans</b>	-18.24 [-30.23,-1.41]**	-18.18 [-30.42,-2.04]**	-18.13 [-30.98,-1.33]**
<b>Community Rating</b>	21.70 [8.79,32.60]***	23.43 [10.29,33.95]***	25.15 [12.56,35.92]***
<b>Guaranteed Issue</b>	6.82 [-9.16,23.39]	8.86 [-6.25,24.99]	10.89 [-4.79,27.36]
<b>Number of Insurers</b>	-0.67 [-1.80,0.79]	-0.66 [-1.80,0.80]	-0.66 [-1.77,0.98]
Multivariate Regression Results			
<b>Direct Enforcement</b>	-11.81 [-33.87,16.77]	-9.49 [-29.47,20.17]	-7.16 [-26.27,26.05]
<b>State Exchange</b>	12.92 [-14.37,40.15]	14.86 [-13.37,45.24]	16.80 [-12.98,47.47]
<b>Exchange Glitches</b>	6.53 [-19.61,37.96]	4.04 [-20.87,38.39]	1.55 [-21.60,34.31]
<b>Medicaid Expansion</b>	-2.96 [-24.40,15.72]	-2.51 [-24.46,17.71]	-2.06 [-22.70,18.77]
<b>Non-Grandfathered Plans</b>	-6.98 [-25.95,15.45]	-6.06 [-25.05,20.20]	-5.14 [-27.15,24.07]
<b>Community Rating</b>	12.77 [-4.91,33.64]	13.86 [-2.94,31.97]	14.96 [-4.24,35.52]
<b>Guaranteed Issue</b>	-4.96 [-23.43,11.05]	-3.52 [-20.06,14.02]	-2.09 [-19.83,16.50]
<b>Number of Insurers</b>	0.00 [-1.17,1.47]	-0.03 [-1.23,1.27]	-0.06 [-1.34,1.24]
<b>Constant</b>	-55.82 [-77.84,-34.85]***	-63.26 [-87.99,-39.10]***	-70.70 [-99.36,-45.90]***

Each column of the multivariate regression results reports all coefficients from a single state-level regression of the welfare impact of the ACA for a given calibrated annual penalty on state policy variables and a constant. Each cell of the univariate regression results reports the coefficient from a separate regression on each policy variable and a constant (coefficient not reported). See text for more details.

\*, \*\*, \*\*\* indicate significance at the 10%, 5%, 1% levels, respectively, block-bootstrapped by state.

## Average Cost

	Calibrated Annual Penalty (\$)		
	12 $\pi$ = 1000	12 $\pi$ = 1500	12 $\pi$ = 2000
	Univariate Regression Results		
<b>Direct Enforcement</b>	-16.69 [-34.11,-7.89]***	-15.17 [-31.10,-5.48]***	-13.65 [-31.47,-3.82]***
<b>State Exchange</b>	27.22 [-5.85,67.78]	28.45 [-3.73,62.95]*	29.69 [-1.43,66.34]*
<b>Exchange Glitches</b>	-14.18 [-41.20,26.26]	-14.92 [-40.69,26.07]	-15.66 [-41.93,23.37]
<b>Medicaid Expansion</b>	11.31 [-8.28,34.54]	12.18 [-7.78,34.47]	13.04 [-5.16,37.17]
<b>Non-Grandfathered Plans</b>	-14.38 [-41.29,7.22]	-14.32 [-37.55,7.10]	-14.26 [-40.61,7.93]
<b>Community Rating</b>	16.64 [-12.26,51.00]	18.36 [-9.22,49.67]	20.09 [-7.59,54.21]
<b>Guaranteed Issue</b>	15.89 [-18.56,64.47]	17.93 [-14.14,60.62]	19.96 [-14.75,60.54]
<b>Number of Insurers</b>	0.00 [-1.18,2.02]	0.00 [-1.04,1.84]	0.00 [-1.03,2.09]
	Multivariate Regression Results		
<b>Direct Enforcement</b>	-12.67 [-34.24,-3.29]**	-10.34 [-30.17,-0.46]**	-8.02 [-29.35,4.35]
<b>State Exchange</b>	51.05 [13.29,91.33]***	52.99 [17.12,92.01]***	54.93 [19.76,91.73]***
<b>Exchange Glitches</b>	-59.98 [-119.19,-4.33]**	-62.47 [-110.68,-0.23]**	-64.96 [-113.21,-7.97]**
<b>Medicaid Expansion</b>	-8.31 [-25.66,12.99]	-7.86 [-26.40,13.93]	-7.41 [-25.23,16.21]
<b>Non-Grandfathered Plans</b>	-3.97 [-21.44,16.50]	-3.05 [-20.38,19.42]	-2.13 [-20.79,22.64]
<b>Community Rating</b>	3.82 [-17.86,34.14]	4.92 [-15.08,30.63]	6.02 [-13.76,31.51]
<b>Guaranteed Issue</b>	2.31 [-29.77,31.77]	3.74 [-23.97,31.48]	5.18 [-22.19,36.28]
<b>Number of Insurers</b>	0.17 [-1.33,2.03]	0.14 [-1.26,1.90]	0.11 [-1.24,1.66]
<b>Constant</b>	-30.76 [-46.92,-12.80]***	-38.20 [-55.62,-20.25]***	-45.64 [-64.93,-25.69]***

Each column of the multivariate regression results reports all coefficients from a single state-level regression of the welfare impact of the ACA for a given calibrated annual penalty on state policy variables and a constant. Each cell of the univariate regression results reports the coefficient from a separate regression on each policy variable and a constant (coefficient not reported). See text for more details.

\*, \*\*, \*\*\* indicate significance at the 10%, 5%, 1% levels, respectively, block-bootstrapped by state.

**Premium**

	Calibrated Annual Penalty (\$)			Calibrated Annual Penalty (\$)			Calibrated Annual Penalty (\$)		
	12π = 1,000			12π = 1,500			12π = 2,000		
	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)
	$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	$12\pi^*$	$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	$12\pi^*$	$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	$12\pi^*$
AK	-11	-11	182	-29	-29	137	-46	-46	123
AL	-94	-94	10,585	-92	-92	12,847	-91	-91	14,385
AR	-90	-90	-561	-100	-100	-680	-110	-110	-760
AZ	-29	-29	-495	-35	-35	-529	-41	-41	-548
CA*	60	60	306	119	119	331	179	179	345
CO	-43	-43	-1,790	-46	-46	-2,006	-50	-50	-2,136
CT	-72	-72	-617	-80	-80	-726	-89	-89	-796
DC	-28	-28	-57	-39	-39	-58	-51	-51	-59
DE	5	5	721	-3	-3	641	-10	-10	607
FL	-77	-77	-1,137	-83	-83	-1,352	-89	-89	-1,492
GA	-74	-74	-1,318	-80	-80	-1,560	-85	-85	-1,718
HI	1	1	458	5	5	469	9	9	475
IA	-31	-31	-807	-35	-35	-874	-40	-40	-911
ID	-43	-43	-1,694	-46	-46	-1,897	-50	-50	-2,018
IL	-69	-69	-756	-77	-77	-887	-85	-85	-972
IN	-87	-87	-389	-98	-98	-470	-110	-110	-524
KS	-54	-54	-466	-63	-63	-529	-72	-72	-567
KY	-45	-45	-848	-50	-50	-948	-56	-56	-1,008
LA	-54	-54	-965	-60	-60	-1,102	-66	-66	-1,186
MA*	-30	-30	931	-18	-18	1,046	-7	-7	1,115
MD	-22	-22	-33	-32	-32	-33	-42	-42	-33
ME	-24	-24	14	-37	-37	14	-50	-50	14
MI	-70	-70	-858	-78	-78	-1,009	-85	-85	-1,107
MN	-32	-32	-927	-37	-37	-1,008	-41	-41	-1,053
MO	-44	-44	-6,273	-45	-45	-7,079	-46	-46	-7,566
MS	-54	-54	-932	-60	-60	-1,062	-66	-66	-1,143
MT	-163	-163	-745	-173	-173	-969	-183	-183	-1,140
NC	-72	-72	-1,136	-78	-78	-1,340	-84	-84	-1,472
ND	-28	-28	-3,622	-30	-30	-3,939	-31	-31	-4,119
NE	-28	-28	-1,899	-30	-30	-2,056	-32	-32	-2,144
NH	-16	-16	-308	-21	-21	-318	-25	-25	-322
NJ*	109	109	-556	95	95	-833	82	82	-1,111
NM	-121	-121	-5,728	-123	-123	-7,150	-125	-125	-8,164
NV	-12	-12	169	-23	-23	159	-34	-34	154
NY	-26	-26	-385	-33	-33	-408	-39	-39	-420
OH	-67	-67	-10,724	-68	-68	-12,595	-69	-69	-13,799
OK	-74	-74	-840	-82	-82	-994	-89	-89	-1,094
OR	-58	-58	-1,214	-63	-63	-1,398	-69	-69	-1,514
PA	-57	-57	-1,270	-62	-62	-1,460	-66	-66	-1,577
RI	-17	-17	52	-27	-27	51	-37	-37	51
SC	-66	-66	-647	-74	-74	-754	-82	-82	-822
SD	-29	-29	-1,782	-31	-31	-1,934	-34	-34	-2,020
TN	-45	-45	-1,227	-49	-49	-1,378	-54	-54	-1,468
TX	-77	-77	-1,173	-83	-83	-1,396	-89	-89	-1,542
UT	-55	-55	-626	-63	-63	-714	-71	-71	-768
VA	-31	-31	-1,014	-35	-35	-1,102	-39	-39	-1,151
VT	-8	-8	-114	-11	-11	-115	-14	-14	-115
WA	-50	-50	2,329	-45	-45	2,674	-41	-41	2,888
WI	-34	-34	-27	-49	-49	-27	-64	-64	-27
WV	-102	-102	-690	-111	-111	-849	-120	-120	-960
WY	-64	-64	-725	-72	-72	-843	-80	-80	-918
<b>Summary*</b>	-59	-59		-65	-65		-71	-71	
<b>Summary</b>	-55	-55		-59	-59		-64	-64	

\*States with data anomalies omitted from state-level welfare regression analysis. MA is also omitted.

### Average Cost

	Calibrated Annual Penalty (\$)			Calibrated Annual Penalty (\$)			Calibrated Annual Penalty (\$)		
	$12\pi = 1,000$			$12\pi = 1,500$			$12\pi = 2,000$		
	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)	Full Monthly Welfare Change Per Enrollee (\$)	Monthly Welfare Change from Selection Per Enrollee (\$)	Optimal Annual Penalty (\$)
	$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	$12\pi^*$	$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	$12\pi^*$	$W_{full}/I^{*,post}$	$W_{sel}/I^{*,post}$	$12\pi^*$
AK	-3	-3	356	-21	-21	218	-39	-39	182
AL	-59	-59	8,324	-57	-57	9,662	-56	-56	10,506
AR	-48	-48	-325	-58	-58	-362	-68	-68	-383
AZ	-20	-20	-246	-25	-25	-254	-31	-31	-259
CA*	-77	-77	665	-18	-18	796	42	42	882
CO	-16	-16	-631	-19	-19	-656	-23	-23	-670
CT	10	10	995	1	1	801	-8	-8	730
DC	16	16	1,449	4	4	907	-7	-7	764
DE	-26	-26	-272	-33	-33	-285	-40	-40	-292
FL	-40	-40	-672	-46	-46	-742	-52	-52	-782
GA	-26	-26	-479	-31	-31	-508	-37	-37	-524
HI	-3	-3	673	1	1	697	5	5	710
IA	-36	-36	-940	-40	-40	-1,031	-45	-45	-1,083
ID	-47	-47	-1,814	-50	-50	-2,048	-53	-53	-2,190
IL	-53	-53	-604	-60	-60	-685	-68	-68	-734
IN	-37	-37	-142	-49	-49	-152	-61	-61	-157
KS	-56	-56	-482	-65	-65	-550	-75	-75	-592
KY	31	31	3,819	25	25	2,587	20	20	2,228
LA	-32	-32	-580	-38	-38	-626	-44	-44	-653
MA*	6	6	382	18	18	400	29	29	409
MD	-12	-12	156	-22	-22	149	-32	-32	146
ME	87	87	-629	74	74	-943	62	62	51,574
MI	-15	-15	-31	-23	-23	-32	-30	-30	-32
MN	-69	-69	-1,723	-73	-73	-2,024	-77	-77	-2,218
MO	-42	-42	-6,007	-43	-43	-6,743	-44	-44	-7,183
MS	-21	-21	-297	-27	-27	-309	-33	-33	-316
MT	-73	-73	-490	-83	-83	-578	-93	-93	-635
NC	-20	-20	-254	-26	-26	-263	-32	-32	-268
ND	0	0	565	-1	-1	558	-2	-2	555
NE	-28	-28	-1,939	-31	-31	-2,102	-33	-33	-2,195
NH	-2	-2	402	-6	-6	388	-11	-11	381
NJ*	145	145	-556	131	131	-833	118	118	-1,111
NM	-57	-57	-3,836	-59	-59	-4,426	-61	-61	-4,794
NV	-4	-4	366	-15	-15	322	-26	-26	304
NY	83	83	-2,335	77	77	31,639	71	71	9,710
OH	-58	-58	-9,819	-59	-59	-11,365	-60	-60	-12,336
OK	-55	-55	-668	-62	-62	-761	-70	-70	-819
OR	-72	-72	-1,407	-78	-78	-1,662	-83	-83	-1,828
PA	-42	-42	-997	-47	-47	-1,109	-52	-52	-1,176
RI	4	4	656	-6	-6	544	-16	-16	501
SC	-26	-26	-184	-34	-34	-192	-42	-42	-196
SD	-37	-37	-2,215	-40	-40	-2,455	-42	-42	-2,595
TN	-31	-31	-868	-36	-36	-940	-40	-40	-981
TX	-41	-41	-718	-48	-48	-796	-54	-54	-841
UT	-44	-44	-499	-51	-51	-553	-59	-59	-585
VA	-12	-12	-229	-16	-16	-233	-20	-20	-235
VT	11	11	1,670	8	8	1,525	5	5	1,462
WA	-38	-38	2,008	-33	-33	2,259	-29	-29	2,409
WI	-26	-26	30	-41	-41	29	-56	-56	29
WV	-47	-47	-373	-56	-56	-415	-66	-66	-440
WY	-54	-54	-631	-62	-62	-718	-70	-70	-771
<b>Summary*</b>	-30	-30		-36	-36		-42	-42	
<b>Summary</b>	-29	-29		-34	-34		-38	-38	

\*States with data anomalies omitted from state-level welfare regression analysis. MA is also omitted.

## **V. Enrollment at the End of 2014Q2**

The table I present here is an extension of *Summary Statistics - 2014Q2 ONLY*, reported above. Here, I report the *pre-* and *post-* reform enrollment numbers in the first two columns. I also report exchange enrollment (from ASPE) as a percentage of post-reform enrollment and post-reform enrollment as a percentage of the state population in the last two columns. These four columns account for the only difference between this table and the version produced above.

It should be noted that these enrollment numbers differ from the coverage numbers in that they are a simple count of individuals enrolled, whereas coverage numbers are computed as the average number of individuals enrolled throughout the three-month period (quarter).

Summary Statistics - 2014 Q2 ONLY (extended)

	Enrollment (Monthly Average, Thousands of Persons)		Coverage (Monthly Average, Thousands of Persons)		Premium (Monthly Average, \$)		Average Cost (Monthly Average \$)		Adverse Selection?	Markup Increase?	Exchange Enrollment as % of Post Enrollment	Post Enrollment as % Percent of Population
	E <sup>pre</sup>	E <sup>post</sup>	I <sup>pre</sup>	I <sup>post</sup>	P <sup>pre</sup>	P <sup>post</sup>	AC <sup>pre</sup>	AC <sup>post</sup>				
AK	10	80	10	76	394	335	228	243	0	0	16	10.8
AL	185	196	185	189	184	285	163	218	0	1	50	4.0
AR	100	228	100	215	177	283	141	207	0	1	19	7.7
AZ	130	204	129	196	231	257	187	204	0	1	59	3.1
CA*	874	178	873	184	226	274	175	224	1	0	792	0.5
CO	225	285	220	275	218	267	186	228	0	1	44	5.4
CT	58	120	58	115	336	392	292	314	0	1	66	3.3
DC	13	36	13	33	279	308	300	275	1	1	30	5.5
DE	14	27	14	24	366	360	251	324	0	0	53	2.9
FL	854	1,519	854	1,489	193	282	157	199	0	1	65	7.8
GA	413	653	422	624	181	277	148	183	0	1	48	6.5
HI	33	20	34	20	253	334	236	301	1	1	44	1.4
IA	139	208	143	208	251	249	187	263	0	0	14	6.7
ID	92	126	92	120	202	246	157	219	0	0	60	7.8
IL	327	605	322	589	261	326	215	349	0	0	36	4.7
IN	98	265	98	258	278	370	225	251	0	1	50	4.0
KS	75	153	82	168	147	213	110	182	0	0	37	5.3
KY	137	193	141	198	249	293	252	240	1	1	43	4.4
LA	165	261	164	249	240	322	176	223	0	1	39	5.6
MA*	330	202	331	206	440	489	424	433	1	1	16	3.0
MD	121	284	121	268	220	236	174	174	0	1	24	4.8
ME	16	57	17	53	408	414	427	276	1	1	78	4.3
MI	248	441	248	431	215	288	204	227	0	1	62	4.5
MN	220	287	219	283	231	253	193	293	0	0	17	5.3
MO	215	237	213	233	218	280	160	233	0	0	64	3.9
MS	50	73	49	71	217	283	163	182	0	1	84	2.4
MT	20	53	11	23	219	425	214	392	0	1	69	5.2
NC	400	644	398	617	235	325	210	226	0	1	56	6.5
ND	44	47	43	47	288	330	265	276	0	1	23	6.5
NE	85	86	80	83	239	279	212	243	0	1	50	4.6
NH	31	57	31	54	327	352	210	191	1	1	71	4.3
NJ*	23	85	34	81	508	339	525	286	1	1	190	1.0
NM	63	86	63	80	195	309	179	307	0	0	37	4.1
NV	52	115	50	117	219	219	196	166	1	1	40	4.1
NY	212	367	208	346	355	381	345	249	1	1	101	1.9
OH	287	334	292	322	212	284	154	227	0	0	46	2.9
OK	88	165	88	155	191	262	148	266	0	0	42	4.3
OR	151	224	150	216	234	319	196	324	0	0	30	5.7
PA	473	733	486	733	228	294	233	272	0	1	43	5.7
RI	16	39	17	36	367	361	312	323	0	0	74	3.7
SC	87	174	86	166	224	296	167	196	0	1	68	3.6
SD	64	76	64	75	219	254	217	276	0	0	17	9.0
TN	215	305	214	297	199	258	163	215	0	1	50	4.7
TX	732	1,195	741	1,137	168	249	152	239	0	0	61	4.5
UT	120	205	121	229	176	234	138	188	0	1	41	7.1
VA	280	391	279	384	253	292	199	221	0	1	55	4.7
VT	23	29	23	28	417	399	397	372	1	1	132	4.6
WA	286	236	285	236	281	347	223	286	1	1	69	3.4
WI	110	590	109	637	245	210	207	163	1	1	24	10.3
WV	15	35	15	32	266	402	257	356	0	1	58	1.9
WY	14	25	14	24	321	409	218	299	0	1	49	4.2
<b>Summary*</b>	<b>7,806</b>	<b>12,769</b>	<b>7,828</b>	<b>12,461</b>	<b>223</b>	<b>286</b>	<b>189</b>	<b>233</b>	<b>10</b>	<b>33</b>	<b>50</b>	<b>4.9</b>
<b>Summary</b>	<b>9,033</b>	<b>13,234</b>	<b>9,066</b>	<b>12,932</b>	<b>232</b>	<b>289</b>	<b>198</b>	<b>237</b>	<b>13</b>	<b>35</b>	<b>61</b>	<b>4.2</b>

\*States with data anomalies omitted from state-level welfare regression analysis. MA is also omitted.

Post-reform period defined using only data from 2014Q2.

Source: Author's calculations from SNL, with exchange enrollment from ASPE and population from Census. Post values are averages from 2014Q1 and 2014Q2, weighted by average monthly enrollment. Pre values are an estimate of what the post value would have been absent the implementation of the ACA. They are obtained by estimating a seasonally-adjusted trend regression for each series from 2008Q1 to 2014Q2, omitting 2013Q4 and allowing for a separate intercept for 2014. The pre value reflects the post value minus the 2014 intercept. See text for more details.